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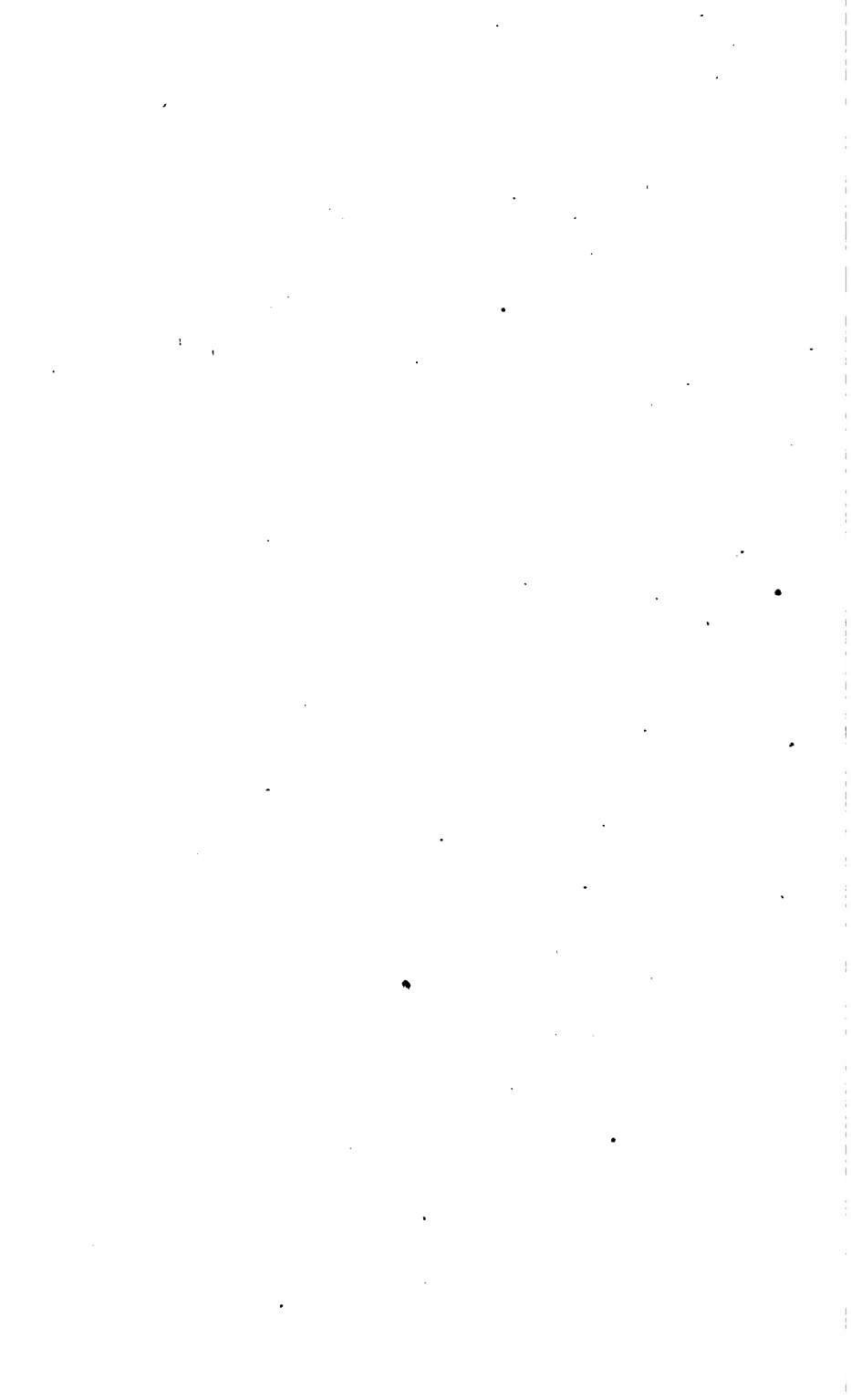
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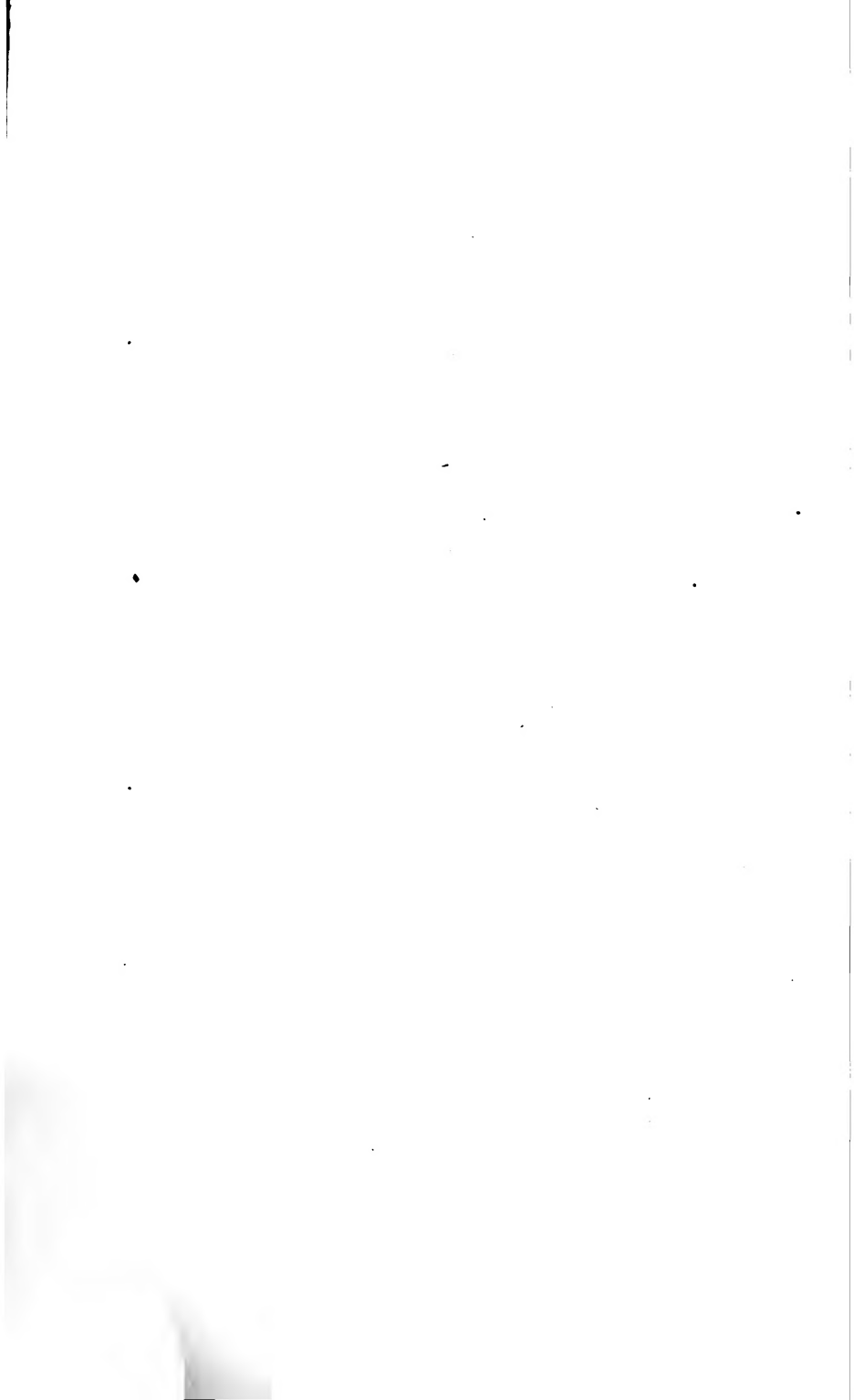
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# THE DUBLIN JOURNAL

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JULY 1, 1873.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

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ART. I.—*On the Recurrent Brief Apnœa, or Ascending and Descending Respiration, in cases of Cardiac Disease.* By THOMAS LAYCOCK, M.D., &c., Professor of the Practice of Medicine, and of Clinical Medicine in the University of Edinburgh.

THE profession is chiefly indebted to members of the Irish school of medicine for information as to a particular form of distressing breathing commonly associated with cardiac diseases, and which was named by Dr. Stokes "Ascending and Descending Respiration." The whole subject of the relations of morbid conditions of respiration to those of the heart is equally important and interesting. I, therefore, propose examining the phenomena, described by Dr. Stokes, from some general points of view. In his valuable treatise on Diseases of the Heart and Aorta, p. 324, Dr. Stokes thus describes them and their ætiology:—"But there is a symptom which appears to belong to a weakened state of the heart, and which, therefore, may be looked for in many cases of the fatty degeneration. I have never seen it except in examples of that disease. It consists in the occurrence of a series of inspirations, increasing to a maximum, and then declining in force and length, until a state of apparent apnœa is established. In this condition the patient may remain for such a length of time as to make his attendants believe that he is dead, when a low inspiration, followed by one more decided, marks the commencement of a new ascending and then descending series of inspirations. . . . The decline in the

length and force of the respirations is as regular and remarkable as their progressive increase. The inspirations become each one less deep than the preceding, until they are all but imperceptible, and then the state of apparent apnoea occurs. This is at last broken by the faintest possible inspiration; the next effort is a little stronger, until, so to speak, the paroxysm of breathing is at its height, again to subside by a descending scale." Although this description is quite accurate as to some cases, there are others in which there is not the orderly regularity described; for not unfrequently the breathing is irregular in rhythm and depth, with little or no apnoea; and in these respects may, I think, be held as strictly analogous to irregular and intermittent pulse.

Dr. Stokes associates the phenomena specially with fatty degeneration of the heart as its cause; but Dr. Little, partly taking up Dr. Stokes's view that at least the interrupted breathing is dependent on structural cardiac disease, has framed another theory of its causation. According to his reported cases, it may occur without any fatty degeneration of the heart whatever, but that it accompanies other affections of the heart and large vessels, as atheroma of the aorta, aortic and mitral incompetence, and dilatation and hypertrophy of the left ventricle. Any theory of causation to be complete must include the origin of both the structural changes and the associated abnormal breathing and pulse, which three things are however distinct. Dr. Little's theory is\* that there is unequal action of the two ventricles owing to some one of the lesions above-mentioned. Consequently, the left ventricle, as shown according to his idea, by the irregular and intermittent pulse, is unable to propel the aerated blood, and stops now and then. This blood, therefore, remains in the lungs, pulmonary veins, and left auricle, and as it has already been fully oxygenated it no longer stimulates the respiratory centre through the vagus. Thus the venous blood which is requisite to excite the vagus branches is not supplied, consequently respiration ceases, and the breathing takes on this irregular action. By degrees the contractions of the ventricle partially free the auricle and pulmonary veins; venous blood is again sent to the lungs, which stimulates the filaments of the pneumogastric and causes respiration to begin again, faintly at first, but becoming gradually stronger as the act of breathing assists the circulation.

The fitness of this ingenious theory to explain the phenomena,

\* See Dr. Little's paper on *Ascending and Descending Respiration*. *Dub. Quart. Jour. of Med. Science*, August, 1868, p. 46.

depends wholly upon the fact whether there be this prior cessation of the action of the left ventricle. If the heart continue to act during the morbid respiration then the theory is not sufficient. Now, as a fact this cessation does not occur in a great proportion of cases; on the contrary, in some to which I shall shortly refer, the heart's action was comparatively little disturbed. On the other hand, many cases of cardiac disease occur with irregular action in which there is no ascending and descending respiration. Nevertheless, although we may affirm as a practical fact, that structural diseases of the heart do not constitute a necessary condition for the manifestation of this irregular kind of breathing, the two are constantly associated, and I cannot but concur with Dr. Little in the opinion that the *vagus system* is involved.

A crucial example of the phenomena, as a neurosis of the *vagus*, occurred in the Royal Edinburgh Infirmary, in November, 1863, upon which I lectured at the time.\* My friend, Dr. Herbert Taylor (now of Freshwater, Isle of Wight), was then one of my clinical clerks, and took copious notes of the case. The patient was an Irishman, aged fifty-four, admitted into Ward 1, suffering from hemiplegia; as he was repeatedly found to be sound asleep at the time of visit of the class, and as he was not awakened either by the *apnoea* or by feeling his pulse, his case afforded valuable opportunity of leisurely observing the entire series of phenomena. On some occasions his breathing stopped for twenty to forty seconds, and yet with hardly any arrest of the pulse. This case is subjoined:

J. O'H., aged fifty-six, labourer, admitted November 18th, 1863, No family history obtainable. Previously to admission was employed in sinking a well, which kept him constantly wet; has not been a temperate man, but enjoyed good health up to four days before admission. On that day he complained of pain in chest, and

\* I also called attention to it in another lecture reported by the late Dr. Francis Ropes, of Boston, U.S., in *The Medical Journal*, 17th February, 1864, p. 116. "A complication, or coincidence, as it may perhaps be called [of fatty heart], and referred to chiefly by Dr. Stokes, consists in a temporary suspension of the respiratory act. In a case of hemiplegia, now under observation, this peculiar symptom has been well marked. This patient suffers from occasional fits of *apnoea*, which are preceded by some feeble inspirations, while, for the space of twenty or forty seconds, there is absence of respiration. There is no *besoin de respirer* during this interval, and the pulse becomes hurried and irregular. Feeble inspirations then commence, which soon pass into those of an almost stertorous character. The most probable explanation of these phenomena is that a sentient palsy of the respiratory centre occurs, or a paresis of reflex sensibility of the mucous membrane of the lung. Hence the absence of suffocative sensation."



some shortness of breath. He attributed this to over-work, but it was so severe as to oblige him to leave off work, and he consequently went to bed. Next day felt better ; but the day after he felt very giddy, and was forced to return to bed. On 17th, about seven a.m., his wife found him lying half out of bed, and passing urine on the floor; when spoken to said his left arm felt very heavy, and could not move it, and that left leg was the same; he also complained of headache, frontal and temporal, but not severe.

*Present state.*—Decubitus dorsal; eyelids and mouth half closed; body and limbs ill-nourished; vascularity over malar bones more marked on left side than right; right eyebrow wrinkled; left quite flat; left eyelid perhaps slightly more patent than right; incipient arcus senilis; pupils equal and acting; nostrils widely dilated, equally so, do not move with respiration; aural lobes thin and pendulous, equal; right cheek much wrinkled, not so left; upper-lip, as far as sulcus, in middle line, drawn over to right side, and a little upwards; lower-lip does not appear to deviate.

*Right arm.*—Temperature normal to hand; sensibility and movement unimpaired.

*Left arm.*—As well nourished as right; veins on forearm full and prominent, and knotty; temperature feels less, and thermometer proves a difference of four degrees; sensibility impaired, but not annulled; slight resistance to force of extension and flexion; arm semiflexed; when told to raise arm takes hold of it with other one for the purpose; fails to raise it by himself; when raised for him, and let go, it drops heavily and helplessly; does not feel numbed.

*Left leg.*—Temperature feels lower than on right leg; cannot raise leg when told; says it feels numbed when questioned; sensibility not perfect in left leg; reflex action perfectly excited on pricking sole of foot.

Speech somewhat affected, still what he says is pretty easily understood; tongue, furred thickly, is easily protruded, but turns to left side somewhat; urine and fœces not passed involuntarily.

Breathing appears calm for the most part, with frequent intervals of accelerated and laborious breathing. When the act of respiration is suspended the fact of coughing once or twice does not seem to bring it back, but if the patient is roused and made to speak, respiration is resumed. The cessation appears to be quite regular in point of time, occupying generally about thirty seconds, and respiration then continues for about twenty-five respirations. The heart's action at such times was accelerated and tumultuous.

*Heart.*—Percussion area normal; apex beat ill defined, but apparently where it should be; no thrill to be felt, but a fluttering is seen over the whole of the præcordial region when the heart's action is excited; action very quick and irregular, at times more forcible than at others, hesitating and undecided. A dry and harsh murmur takes the place of the first sound at left apex. Was ordered at visit an enema of an ounce of spirits of turpentine, common salt, and gruel; patient passed a good motion after its administration. Next day at noon temperature 2° less in left arm than right. On the 19th sensibility of left arm and leg very much diminished; sense of taste is also impaired; the rigidity noticed on admission is gone; deviation of face to right side less marked; when asked if he has pain, complains a little of forehead, and much of small of back; deglutition is not impaired; urine is ammoniacal, without albumen. He yawned much on day of admission, and also ever since; was often found sleeping at time of visit, when the same respiratory condition was present, but no alteration in cardiac action was detected; ordered sinapisms from neck to between shoulders for fifteen minutes, to be renewed every hour.

21st.—Complains of pain down affected side; speech somewhat more distinct; is certainly more thirsty and drowsiness increasing; moans constantly in his sleep, and is fidgetty and restless. When asked if he has pain, says "no, only a weakness in chest." When told to point out spot, puts his hand at a little above ensiform cartilage; denies being out of breath, and says "Oh, I get my breath all right;" no difference, however, exists in respiratory phenomena.

23rd.—Passed a restless night; some delirium. When asked how he feels, replies, "Oh! I am very well, only the left arm is not quite well yet." Face more drawn to right side; left nostril much dilated; speech less distinct; is emaciating; tongue still deviates to left side, dry and brown; has some difficulty in protruding it, and seems conscious of the fact; some blebs are seen on and about left ankle; yawning increased; deglutition is a little impaired.

24th.—Appears weaker; emaciation is progressing; still restless; says he feels a good deal better; another bleb on calf of left leg; no change in respiratory condition; ordered

R Strychniæ gr.  $\frac{1}{2}$ .

Acid. acet. dil. ʒj.

Aquæ ad ʒxx.

one tablespoonful three times a day.

26th.—Over left leg, and a little over right a plentiful eruption of urticaria is seen.

28th.—Commencing bed-sores on left nates.

*Progress of the Case.*—On December 1st, complained of pain in right side; friction sounds detected; coughs slightly; no expectoration; delirium occurred during the succeeding night; the following morning said he was better, and the ascending and descending respiration was not observed; friction heard in right infra-axillary region; the right side moved but slightly in respiration, which was chiefly diaphragmatic; dulness was perceived over right base posteriorly, where also friction and fine crepitation were heard. Dr. Laycock attributed this defective movement of the right side, and the lesion of the right lung and pleura, to motor and trophic paralysis. On the 3rd December the respiratory phenomena were less marked, but on the 4th weeping was observed in the afternoon, although the patient was cheerful about himself, and the peculiar breathing was again manifested. On the 5th heart's action was calmer. Œdema of the left hand commenced; on the 9th, œdema of the lower part of the left thigh; foot and lower part of leg very cold. On the 12th, a fresh pulmonary attack commenced—the left pleura now being the seat. During the three following days there was considerable delirium; he was very troublesome at night, crying out and groaning. On the evening of the 16th he had more frequent paroxysms of apnoea; the cardiac action was hurried—about 130 per minute, but regular. On the 18th, symptoms were found to have subsided somewhat, but on the evening of that day dyspnoea came on with greatly increased feebleness; pulse about 60, and irregular; respirations hurried and forcible, from 45 to 50 per minute. The pulmonary symptoms had become greatly aggravated, and the patient died about one o'clock on the morning of the 20th. *Post-mortem* was not permitted.

Such are the details of the case, as recorded by my friend Dr. Taylor.

In the absence of a *post-mortem* examination it would be useless to speculate on the lesions which affected the heart. It is not, I think, doubtful, however, that the *pulmonary* lesions were consecutive to the hemiplegia and dependent on centric change in the respiratory trophic system. It is obvious too that the lesion was spinal, for changes of nutrition took place such as occur in paraplegia and other spinal neuroses. These trophic lesions were—the lower temperature observed, the urticaria, the effusive inflammation, as

indicated by the blebs, and similar to that which occurs in herpes zoster and anæsthetic leprosy, the œdema, and the sloughing—all limited to the limbs which were deprived of motion and sensory power. The increased vascularity more especially observed on the left cheek may be attributed also to vaso-motor palsy.

A peculiarity of the case is to be noted in the fact that the pulmonary trophic lesion in this left hemiplegia commenced first in the right thorax, and it was not until towards the close of the case that the left became affected. To this, however, I will again refer. Further, when commenting on the respiration at the bedside, I pointed out that the slower breathing was due to the diminishing sensibility, and the accelerated breathing following the interval of apnoea, was due to the stimulus of unaerated blood—being hurried proportionately to the need of oxygen.

This connexion of the irregular breathing with special morbid states of the nerve-centres was manifest also in Dr. Cheyne's case, which is fully detailed by Dr. Stokes. That patient also had hemiplegia, with coincident symptoms of cardiac degeneration. Further, Dr. Hawtrey Benson details a case\* of mitral disease in a woman aged nineteen, who manifested the breathing *only* while in a semi-comatose condition; when the patient was roused up, and the nerve centres thereby stimulated to increased action, and also when the semi-coma had passed away permanently, respiration became almost normal. Dr. Benson deduces from his observations two causes—  
1. A certain diseased state of the heart, causing a defective excitomotor impulse through the pulmonary branches of the vagus; and  
2. An enfeebled state of the vagus centres leading to diminished reflex action.

There is one fact, however, of fundamental importance in considering the causation of this breathing not referred to in any of the essays to which I have referred, and which was exemplified in the case of the Irishman O'H., namely, its common occurrence during sleep. In none of the cases quoted is mention made of the sleeplessness which this neurosis of the vagus induces, nor of its occurrence during sleep. During the last session at the Royal Infirmary, Edinburgh, when I arrived one day at the bedside of a brewer's cellarman, he told me that he had had no sleep all night, because his heart always stopped just as he was dropping off. I described his feelings to my class, remarking that it was not his heart that

\* *Ascending and Descending Respiration: An Inquiry into its Cause and Diagnostic Value.* Dub. Quart. Journ. of Med. Science, Aug., 1869, p. 127.



stopped, but his breathing, and he eagerly exclaimed, as he listened to my description, "That's it." The clinical resident physician, Dr. James, in accordance with my wish, watched this patient at night, and found that what he suffered from was the ascending and descending respiration. I subjoin an abstract of the notes of this case, well taken by one of my clinical clerks, Mr. Andrew Balfour.

William S., aged forty-three, brewer, admitted 6th February, 1873, complaining of cough, shortness of breath, swelling of the scrotum, legs, and thighs, and pain in both inguinal regions. He had a like illness four or five years ago, and again about two years since, being laid up on each occasion five or six weeks. This illness began about three months ago with cough and shortness of breath, but the swelling of the scrotum and legs only six weeks since. His father died of scarlatina, and a sister died dropsical. Was formerly of intemperate habits, but not for the last two years. On examination face was seen to be pale and swollen, cheeks vascular, a considerable vascular nævus at inferior angle of right scapula, and several smaller nævi over thorax and abdomen. Thighs and legs equally dropsical on admeasurement; scrotum very œdematous, prepuce unaffected. Patient always feels cold, even when near a good fire. Temperature 98°·5, skin moist, respiration 28; a tickling cough, with a tough muco-purulent spit, occasionally streaked slightly with blood; cough much worse at night; percussion slightly impaired, at both bases posteriorly; otherwise good. Sibilant and sonorous râles abundant.

Left external jugular vein a little distended; pulse 72, very weak, and slightly irregular; impulse felt over præcordial region; apex beat between fourth and fifth ribs, an inch internal to nipple line; a diffused impulse in epigastric region; percussion area increased; heart sounds very irregular; rough presystolic murmur at apex, and regurgitant murmur (with second sound) at base. These murmurs were fugitive and neurotic. They wholly disappeared subsequently. Urine 40 oz., sp. gr. 1025; albumen to  $\frac{1}{4}$ .

Does not sleep well; has occasional giddiness; deaf in right ear; position that of semi-orthopnœa.

February 8.—Cough reported much worse, and sleepless, for when he is dropping off to sleep his respiration gradually becomes slower and slower, and finally stops altogether for several seconds, and then patient starts up suddenly "in a fright," the respiration becoming very hurried. Pulse 100, irregular; temperature 97°·75.

*Progress of the Case.*—After vainly trying hydrocyanic acid, and opium, combined with digitalis and quinine, the patient, on 15th February, was ordered gr. v. of the iodide and gr. x. of the bromide of potassium thrice daily, the third dose to be taken at bedtime.

On 17th February the patient had sleep, and the urine less albuminous.

On 19th pulse 96, much more regular, but becomes irregular when slightly agitated in any way; heart sounds more regular, and the horizontal position taken; sleep much better, and breathing more regular; cough and expectoration less.

On February 22nd it was observed that the patient did not awake with the breathing, which was observed to become gradually slower and slower, but not to stop altogether. Then, when at its lowest point, occasional twitchings of the mouth and limbs were observed to take place, and the hurried breathing followed. On 26th the patient vomited, and on 1st March he again was awakened by the apnoea, and on 4th took chlorodyne m. xx. at bedtime with much relief. Next day pulse more regular. On 6th again took chlorodyne, but did not sleep at all, and at eight o'clock the following morning had a severe attack of dyspnoea, and was pulseless for some time. On the 8th took morphia, with benefit. From this date he rapidly improved, and was able to be up every day until the 23rd, when he was attacked by erysipelas of the left thigh; by the 25th gangrene set in, and the patient died on 27th March.

On *post-mortem* examination the heart was found to be hypertrophied and dilated, weighing 1 lb. 14 ozs. There was slight atheroma of the valves, but they were quite competent. Left lung consolidated at apex, either from pneumonia or pulmonary apoplexy, six pints of serum in abdomen. Cortical substance of kidneys increased; capsule somewhat adherent, and surface slightly granular; apparent increase of fibrous tissue. A few small cysts observed.

This case presents a good illustration of the kind of sleeplessness which occurs, and of the conditions under which the apnoea which causes it arises. It is not only exceedingly distressing, but the want of sleep induced increases the gravity of all the worst symptoms, and hastens on a fatal termination. It is less frequently observed than it occurs, because comparatively so few patients are sleeping, or just falling asleep at the time of visit. It must, however, have been often observed, but not differentiated, and probably included under the vague term cardiac asthma. Dr. Hope,

in his essay on disease of the valves of the heart, to be found in the *Cyclopædia of Practical Medicine*, evidently includes it under this head, for he gives a highly graphic description of the sufferings of this class of cardiac cases. It is not always, however, that the distress is due to the feeling of suffocation, which coincides with the period of apnœa. In the case of O'H. it was plain no such feeling was experienced, or disturbed the patient. In the case of a cab-driver (S.), with hemiplegia, in my ward, in whom neurosis of the vagus was seen as irregular and intermittent breathing during waking, and ascending and descending respiration during sleeping—the patient complained that whenever he dropped off to sleep he was immediately roused up by a feeling of giddiness, making no complaint as to his breathing. This was a case of *right* hemiplegia, with more especially impaired sensory function. This patient had irregular pulse, without murmurs, and albuminuria and œdema of the right leg and arm. After death no cerebral lesions were found, further than extensive atheroma of the blood vessels, but there was a small aneurismal excavation in the wall of the enlarged left ventricle filled with a clot the size of a walnut. This case also manifested the trophic and vaso-motor changes in the lungs, only surmised in O'H.'s case. He had great bronchial congestion before death, but after death it was found that the lungs presented quite opposite conditions. The left lung was singularly pale and bloodless, while the right was purple with congestion, probably from crossed action of the nervous system, as in O'H.'s case; the lesion being in the left hemisphere, or corpus striatum also, but above the decussation. In the case of this patient it was very interesting to observe also that the *right* kidney, like the *right* lung, was highly congested and large, the left being small, without congestion.

If then this condition of the breathing be a neurosis of the vagus, not necessarily dependent on structural or other diseases of the heart, it may occur under varying conditions of the nervous system in those who have such disease. A very distressing illustration of this occurred under my observation in the case of a lady who had disease of the heart and albuminuria, and who took the syrup of the phosphate of iron and strychnine. In her the first affection of the breathing was manifested while taking the medicine by sudden attacks, resembling angina pectoris of a most distressing character, occurring when she was sound asleep. These disappeared, and were replaced as dropsy came on by the ascending and descending respiration when falling asleep. That the state of falling asleep

modifies the vagus, so as to induce the phenomena, proves conclusively how pure a neurosis it is in its origin. It cannot be doubted, I think, that merely emotional states will modify the vagus centre in like manner. Experience in this respect as to attacks of paroxysms of whooping cough and spasmodic asthma indicate this conclusion; and it seems to me well worthy consideration whether surgical deaths from chloroform and chloral may not be due to complex causes acting on the cardiac and vagus centres, for in surgical operations, such as on the penis, there is the three-fold causation of—painful emotion—shock to the nervous system by the operation,—and depression to the nervous system by the anæsthetic drug administered. The study of the whole process of ascending and descending respiration in connexion with sleep shows, I think, that the gradually diminished motor activity is coincident with gradually diminished sensory activity until the carbonized blood rouses up the sensory centre.

I have just remarked that both the cardiac and vagus centres may be involved in cases of death from chloroform, and, I think, clinical facts show that this conjunction occurs also as a neurosis, either as foreshadowing or as accompanying cardiac disease, and that such conjunction probably occurs in such cases as have been observed by Dr. Stokes, Dr. Little, and others. The result might be manifested, either by the momentary stop to the action of the left ventricle, characteristic of intermittent pulse, or by one of a more prolonged character, as in angina pectoris. I shall not here enter upon the proof that intermittent pulse is not only a neurosis in a variety of cases of functional diseases of the heart, as is generally acknowledged, but is such also in numerous structural diseases; that this is the case has been fully established, to my own satisfaction, by long and careful observation, but the details would be too numerous to give here, even to satisfy the judgment of others on this point.\* It occurred to me, however, long ago, when studying the pathological relations of sleep, to note the combination of this kind of apnoea with cessation of cardiac action, and I quoted a case in illustration, as follows, taken from *Bell's Nervous System of the Human Body*, 3rd edit., p. 426.<sup>b</sup>

\* Since writing the above I have read with much interest Dr. Nixon's cases of functional mitral murmur in the last (June) number of this Journal. My experience coincides with his—and I may add with that of Dr. Stokes as to functional aortic murmurs.

<sup>b</sup> See my paper on the Reflex Function of the Brain, *Brit. & For. Med. Rev.*, Jan., 1845, p. 306.

A West Indian surgeon consulted Sir Charles Bell with these symptoms:—"On falling asleep, just at the time when volition and sensibility cease, the involuntary motions also stop, with a sensation of death, under which he awakes, generally convulsed. His medical friends have found that when sleep is overpowering him the breathing becomes slower and weaker, the heart and pulse also fall low, and cease to beat as sleep comes on, and after a very short time he awakes in terror."

This case is interesting, as showing that there are cases in which both the heart and lungs cease to act as sleep comes on; we may, therefore, infer that this condition may also arise during the waking state, and this is probably the condition in paroxysms of angina pectoris. Bell, in the work from which I have just quoted, and on the same page, records some most interesting particulars as to John Hunter's case, detailed by the great physiologist himself. On one occasion, when he had missed "his usual attack of gout," but had "a peculiar hard pain about the pylorus," he found that "this was attended with great weakness, and having accidentally cast his eyes to a looking-glass, he fancied that his countenance was like that of a dead man. He could feel no pulse in either of the wrists. Finding the involuntary respiration ceasing, and fearing that he should die in consequence, he imitated the involuntary by a voluntary action of the muscles, and breathed altogether by force as well as he could."

The condition which Hunter experienced was probably premonitory of that diathetic structural degeneration of the coronary arteries, which was found to have occurred in him, he having died in a paroxysm of angina pectoris, induced by emotion. My own experience has led me to the conclusion that intermittent pulse, heart-ache, and other sensory conditions referred to the heart in first attacks of gout, and in cases of fatty degeneration preceded by depressing emotions, as grief and anxiety, are premonitory of structural change, and indicate the beginning of a trophic neurosis of the heart, the coronary arteries, and aorta. Such results follow after the depressing emotions and other causes have occurred, at indefinite periods of from a few days to two or three years. Hence, to have a good history of the relations of the apnœa I have discussed to intermittent pulse and structural diseases of the heart, a more careful inquiry into the conditions of the nerve centres, which influence the nutrition or functional activity of the heart is needed. Of this, the case of O'H. is an illustration. I would

also further observe, that according to my experience, undue irritability of the heart, such as is manifested sometimes by persons who are being examined for the purpose of life assurance, so that the heart beats rapidly and nervously under the procedure, is premonitory of future cardiac disease, and sometimes at no long interval of time.

I have not entered upon the mechanism of this apnoea, the subject being too complex for discussion now. I would, however, remark here, that it is probable cases will be found to differ, according as the right or left vagus is affected. Recent experimental researches tend to show that the right exercises a much more powerful inhibitory influence over the heart than the left, and is exerted equally over every part.\* It is probable that in the case of O'H., the palsy being at the left side, the lesion was in the right half of the nerve-centres. So also in the case of the cab-driver S. Physiologists, however, have not unravelled the problem of crossed action, and the vagus may be affected, so as to seriously influence nutrition of the lungs and the co-ordinate action of the heart, yet with no general symptoms. This is, I think, frequently the case in unilateral pneumonias.

Another question arises on considering the mechanism, which I must, at least, glance at, and remark, therefore, here, that it is not improbable the phrenic nerve and diaphragm will be found involved in a certain class of cases, in which there is total cessation of breathing and pulse, such as occurs in paroxysms of angina pectoris and other cardiac diseases of a neurotic character. I notice that in one case referred to by Dr. Little (recorded by Dr. Head) fatty degeneration of the diaphragm was observed. It would, perhaps, be found that cases of the kind are more common than is suspected, if the diaphragm was carefully examined in *post-mortems*.<sup>b</sup>

A few words as to the prognostic significance of this apnoea. My experience leads me to the conclusion that conjoined with anasarca, it is of evil omen, and this is not unfrequently the state of the patient. I observe that in Dr. Cheyne (the first recorded case), there was anasarca.

But, whether or no, this peculiar apnoea is so distressing and tends so to abbreviate life, that I am induced to add a few words as to treatment. The iodide and bromide of potassium in doses of five

\* See paragraph in *Journ. of Anatomy and Physiology*, Nov., 1872, p. 180.

<sup>b</sup> To this point I referred in the lecture published in the *Medical Circular* of February 17th, 1864.

grains of the former and fifteen of the latter taken at bedtime have proved in some of my cases an useful hypnotic; but the means which are available to give tone to the nervous system in general should be diligently adopted, and amongst these nothing is more valuable than a cool bracing atmosphere. Strychnine with iron, when there is fatty degeneration of the heart, is beneficial, but is of doubtful, if not dangerous use, in other cases. The iodide of potassium is a valuable alterative and tonic with a bitter infusion. In cases in which hypnotics must be used the readiest is a few minims of the liquor of bimeconate of morphia. Hypodermically, all we have to aim at in the use of hypnotics is, so to diminish the sensibility of the pneumogastric centres, so that the urgent need for breathing, which comes on consecutively to the apnoea be not felt, for it is the feeling of suffocation which wakens. I have repeatedly watched a patient thus treated by morphia hypodermically, and observed that so soon as the patient was under the influence of the drug, which occurred in about fifteen minutes, the apnoea ceased and the hurried breathing took place without the patient being awakened. Ten or fifteen minims of the liquor of the bimeconate will suffice for this purpose. Upon the whole, however, the iodide and bromide must be preferred as they are both palliative and curative, whereas morphia is not curative *per se*, but, on the contrary, is injurious. I am satisfied it tends to increase the albuminuria and dropsy which accompany the cardiac and pulmonary lesions. Not unfrequently the gastric vagus is implicated, in which cases hydrocyanic acid is the most efficacious. The influence of the stomach on the heart and lungs should, indeed, always have careful consideration in cardiac and pulmonary neuroses.

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ART. II.—*Report on the Small-pox Epidemic, 1871 to 1873, as observed in Cork-street Fever Hospital.* By T. W. GRIMSHAW, M.D., Fellow and Censor of the College of Physicians; Physician to the Hospital, and to Steeven's Hospital, &c., &c.

I CONSIDER this a suitable time to take a general review of the small-pox epidemic 1871-'72, and '73, as a whole, especially as it affected this hospital. The small-pox epidemic of 1871, '72, and '73, has been one of the severest which has visited Dublin during the present century; it can rank only after the great fevers of 1826 and 1847, and the cholera epidemics of 1832 and 1849. The cases of cholera during the epidemic of 1866, the last great visitation which fell upon Dublin, numbered about 2,500, with 1,186 deaths; while

the late cases of small-pox must have numbered 12,000, probably 15,000, and the disease caused 1,647 deaths in the Dublin registration district, in the years 1871 and '72. The number of those who were affected by the disease, and who (together with their friends) were obliged to apply to the Mansion House Relief Committee, reached 6,000, which represents an almost incalculable amount of misery.

TABLE I.—*Showing the Admissions of Small-pox Patients per month into Cork-street Hospital during the years 1871–72–73, compared with the Meteorological conditions during the same period.*

1	Admissions 2	Meteorological Conditions						
		Mean Bar. 3	Mean Temp. 4	Mean Dry B. 5	Mean Wet B. 6	Mean Humidity 7	Rain- fall 8	Rainy Days 9
		Inches	Deg.	Deg.	Deg.	Per cent	Inches	
1871								
February, - - -	1	29.847	45.3	47.0	44.7	83.3	1.648	16
March, - - -	1	29.908	45.6	47.5	44.4	78.8	0.815	12
April, - - -	7	29.705	48.7	50.5	47.6	81.2	3.162	20
May, - - -	5	30.065	52.6	55.8	51.4	73.5	0.378	9
June, - - -	7	29.924	56.0	58.3	54.4	77.0	2.265	16
July, - - -	1	29.784	59.2	61.1	57.2	77.8	4.391	28
August, - - -	4	29.951	60.8	63.1	59.2	78.0	1.065	12
September, - - -	8	29.887	53.6	55.2	52.2	81.0	4.048	13
October, - - -	41	29.829	50.7	52.3	49.9	83.5	2.917	16
November, - - -	59	29.986	42.6	43.7	41.5	83.3	1.258	14
December, - - -	78	30.003	41.4	42.2	39.9	82.1	0.797	15
1872								
January, - - -	81	29.405	41.6	42.4	40.4	84.5	2.864	23
February, - - -	90	29.616	45.2	46.0	43.9	84.2	2.557	20
March, - - -	97	29.698	45.1	46.3	43.7	80.7	2.419	21
April, - - -	65	29.914	47.3	49.2	45.3	74.0	2.655	12
May, - - -	59	29.919	49.3	51.1	47.1	74.0	2.164	22
June, - - -	64	29.825	55.2	57.5	53.5	76.0	3.276	19
July, - - -	34	29.926	61.2	63.4	58.4	72.1	1.098	12
August, - - -	16	29.967	58.9	60.7	56.7	76.8	4.302	17
September, - - -	7	29.801	54.8	56.2	53.2	80.7	2.464	22
October, - - -	7	29.660	46.5	47.9	45.4	81.8	3.421	22
November, - - -	3	29.578	43.6	44.9	42.5	82.1	3.414	24
December, - - -	8	29.464	41.4	42.5	40.8	86.5	4.932	24
1873								
January, - - -	2	29.550	42.2	42.9	40.7	83.0	2.650	21
February, - - -	1	30.160	37.1	38.4	36.0	79.8	0.925	8
March, - - -	—	29.792	42.0	43.4	40.9	80.7	2.391	22
Total, - - -	746							

The meteorological data, furnished by Dr. J. W. Moore, and given in columns 3, 5, 6, and 7, are the results of observations taken daily at 9 a.m., 3 p.m., and 9 p.m. The mean temperature given in column 5 is deduced from the daily maximal and minimal temperatures in the shade. The rainfall is the monthly total of daily readings taken at 9 a.m., and a "rainy day" is one on which at least .01 of an inch of rain is collected within 24 hours. The barometer readings are corrected and reduced to 32° at mean sea level.



From the foregoing table it will be seen that the epidemic commenced in February, 1871, but only attained considerable proportions in October of the same year. It reached its height in March, 1872, and immediately began to fall until August, 1872, when a substantial decrease may be said to have taken place. A few cases, however, continued to drop in until February of 1873, after which the epidemic became absolutely extinct. Dr. J. W. Moore, Assistant Physician to the Hospital, has kindly furnished records of the meteorological conditions which prevailed during the period of the epidemic, which will prove of considerable interest, especially showing, as they do, how the epidemic reached its height in the cold winter weather, a circumstance observed in nearly all great small-pox epidemics. This is probably owing to the propagation of the disease by overcrowding and bad ventilation, which of course prevail to a greater extent in winter than in summer.

The first case was admitted into hospital on the 26th of February, 1871, from 2, Barry's-court, and died on March 4th. This was the first death registered in Dublin during the epidemic. Table I. gives by months the admissions during this epidemic, and this may be fairly taken as a measure of the rise and fall of the epidemic. Although at one time cases had to be refused, owing to want of accommodation, yet these were comparatively so few that the variations in the rate of admissions measure, as always in epidemics of contagious fevers in Dublin, the variations in the epidemic. It may here be remarked that not a single bed for the accommodation of fever patients was closed in consequence of the great pressure from small-pox, which may therefore be looked upon as altogether extra work for the officers, extra trouble in management, and extra expenditure for the institution. The total number of cases treated was 746; of these 563 recovered, and 162 or 21·6 per cent. died, and one patient was removed from hospital while still suffering from the disease. Comparing this with the mortality in other institutions we find that in the

Cork-street Fever Hospital, the rate was	21·6
Hardwicke, . . . . .	20·0
Cork, . . . . .	22·5
London Small-pox and Vaccination Hospital, 18·8	
Hampstead (London) Fever Hospital, . . . . .	19·4
Homerton (London) . . . . .	16·3

From this it appears that the mortality with us has been a little

higher than the Hardwicke, and a little lower than the Cork Hospital; but it seems remarkable that these three Irish hospitals have a higher mortality than the London hospitals, and that vaccination does not altogether account for the difference is shown by this list:—

	General Per cent. Mortality	General Per cent. Vaccination
Cork-street, . . . . .	21·6	81·8
Hardwicke, . . . . .	20·0	83·7
Cork, . . . . .	22·5	68·1
London (Small-pox), . . . . .	18·8	91·5
Hampstead (Fever), . . . . .	19·4	79·4
Homerton, . . . . .	16·3	67·0

If we take the Hardwicke, Cork-street, and Hampstead Hospitals we find that the per centage of vaccinated cases is nearly the same, and the per centage mortality is also nearly the same.

The localities from whence the cases came were those which usually furnished cases of fever, and the following lists give some of the more remarkable streets, with the number of cases furnished by each.

Francis-street, seventeen cases from sixteen houses, eight of which are known fever nests.

Bride-street, sixteen cases.

Meath-street, fifteen.

Cork-street, fifteen. No. 12 furnished three cases.

Townsend-street, fourteen.

Golden-lane, fourteen. No. 7 furnished four cases, No. 9 two cases, and No. 5 two cases:

Bishop-street, twelve, all from different houses.

Coombe, fourteen. No. 28 furnished three cases.

Patrick-street, twelve from ten houses, eight of which are noted fever houses.

King-street, ten. The first case in this street came from Drogheda.

Chancery-lane, ten.

Cuffe-street, nine cases. No. 25 furnished three cases, and several others occurred in the house.

Essex-street, West, nine. No. 11 furnished three cases.

Plunket-street, nine. No. 24 furnished three cases, one of which was malignant. This is a well-known fever house.

South Gloucester-street, seven cases. No. 2 furnished three cases.

New-row South, seven.

Aungier-street, seven. No. 39 furnished four cases.

Charlemont-street, six.

Mercer-street, six.

Newmarket, six.

Brown-street, six.

Fishamble-street, five.

M'Guinness's-place, five. These were all furnished by well-known fever houses.

Bow-lane, five. No. 8 furnished four of these.

Cook-street, five.

Corn-market, five.

Pitt-street, five.

I wish here to refer to Darby-square, which, although it furnished but two cases to the hospital, was severely visited by the disease, and is a well-known hot-bed for contagion. Also to 18, Ardee-street, which is continually on the hospital books as a fever haunt, and in this epidemic furnished no less than seven cases to our wards, while many more cases occurred in the house.

William's-place, Long-lane, is also worthy of note; from these little cottages we had four cases, all from different houses, all severe, three of them being malignant; the fourth confluent; all died. Cholera prevailed here in 1866, and we have frequently cases of fever from this place.

The cases admitted belong to three varieties, under which all the tables have been arranged. These varieties are *confluent*, the term being used in the ordinary sense, that is where confluence occurs on the face; *discrete*, where there is no confluence; and *malignant*, by which is meant those cases where the eruption is black, owing to the effusion of blood under the skin, or into the vesicles, and where there is also hæmorrhage from some one or more of the orifices of the body.

The three varieties were distributed as shown in Table II.

TABLE II.

Varieties	Number of Cases	Proportion per cent. of all the cases	Recovered	Died	Mortality per cent.
Discrete -	460	61·8	453	7	1·6
Confluent -	237	31·7	124	113	47·6
Malignant -	49	6·5	7	42	85·7
Total -	746	100·0	584	162	21·6

By far the most important question in connexion with small-pox is the influence which vaccination has upon the prevalence, spread, progress, nature, and mortality of the disease. As to the prevalence and spread of the disease, these are questions outside a detailed consideration in this report, but I may refer to the opinion expressed, that vaccination has no influence on the prevalence or spread of small-pox, an opinion which is still held, I am sorry to say, by some, in spite of all evidence to the contrary. That vaccination does not entirely prevent the disease, is, unfortunately, but too evident from the extent of the recent epidemic in this city, but the influence of vaccination in modifying it, and in diminishing the mortality, is clearly shown in Table IV. The relation between the mortality of the vaccinated and unvaccinated is shown in Table III.

TABLE III.

HOSPITALS	MORTALITY PER CENT.		
	Vaccinated	Unvaccinated	General
Cork-street - - - -	10·8	71·8	21·6
Hardwicke - - - -	11·2 <sup>a</sup>	78·57 <sup>a</sup>	20·0 <sup>a</sup>
Cork - - - - -	5·5	58·0	22·5
London Small-pox - - -	14·9	66·2	18·8
Hampstead (London) - - -	11·4	51·2	19·36
Homerton - - - - -	5·9	37·7	16·3

The difference in total mortality between the Cork-street and Hardwicke hospitals might at first seem remarkable, the former being higher than the latter; but it will be seen that in *each* class the Cork-street mortality is lower than the Hardwicke. The apparent difference is caused by the vaccinated cases being more numerous (83·7 per cent.) in the latter than in the former (81·8 per cent.). From this table it will be seen that of the vaccinated cases only 10·8 per cent. died, while of the unvaccinated 71·8 died. If each class be taken separately a similar result is shown in even a more striking manner (*vide* Table IV.).

<sup>a</sup> From Return of Board of Superintendence.

TABLE IV.

	DISCRETE			CONFLUENT			MALIGNANT			TOTAL		
	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality
Vaccinated -	443	1	0.2	143	46	32.2	25	18	72	611	65	10.8
Unvaccinated -	17	6	35.1	94	67	71.2	24	24	100	135	97	71.8
Total -	460	7	1.6	237	113	47.6	49	42	85.7	746	162	21.6
Per cent. vaccinated in each class -	96.3			60.4			51.9			81.8		

Of the vaccinated cases in the discrete variety, the mortality was practically nothing (0.2 per cent.), but one patient having died. In that case the patient had inflammation of the lungs, probably quite independent of the small-pox. Of the unvaccinated, however, in this class, 35.1 per cent. died. In the confluent cases the mortality among the vaccinated was 32.2 per cent., while among the unvaccinated it was as high as 71.2 per cent. In the malignant or purpuric variety, the mortality among the vaccinated was 71.8 per cent., or about the same as in the unvaccinated confluent variety; while in this variety *not one* unvaccinated case recovered. It may be merely a coincidence of per centage mortality, but it is a remarkable fact that in the cases under consideration vaccination reduced the mortality of confluent cases to that of discrete unvaccinated, and that of malignant to that of confluent unvaccinated cases. The proportion of vaccinated to unvaccinated cases in each variety is considerably greater, except in the malignant variety, where the proportions are nearly equal. The difference is most remarkable in the discrete variety, where the number of unvaccinated cases is very small; in other words, vaccination *prevented* a large number of these cases from being confluent.

As to the nature of the vaccination marks, whether good or bad, I have not been able to find that there was any relation between the nature of the mark and the severity of the disease. In the commencement of the epidemic we tried to note the difference between good and bad marks, but soon gave it up as

impracticable. In many of the confluent cases we could tell nothing about the matter, and in the discrete cases there seemed to be little difference between them. I believe one cause of this is, that a perfectly successful vaccination, which has thoroughly affected the system, may have its after appearance so modified by local causes as to alter what should have been a good mark into a very bad one. As to the number of marks, we had but few cases where there were more than two, except in the re-vaccinated cases, which I shall mention presently. In all those where there were but two marks these had been produced at the time of the primary vaccination, either by two primary vaccinations or by test vaccination. Of re-vaccinated cases, properly so called, we had but four. Two of these were brothers, one of whom had been re-vaccinated twice, and the other once; both of them had purpuric small-pox, and both died, showing some extraordinary family peculiarity. Of the other two, one was doubtful and the other so remarkable that I will give the particulars. A male child, aged six weeks, who had not been vaccinated, was admitted: his mother had been successfully re-vaccinated about three weeks before; also his sister, aged thirteen. In order to secure proper attention to the baby, the sister was admitted to nurse him. This she did, sleeping with him at night, and carrying him in her arms all day, until his death, on the eighth day. Then the sister fell sick, and had the initiatory fever of the disease, and five modified vesicles appeared on her face and two on her chest; she was confined to bed only for four days. I need scarcely point out that the exposure to contagion in this case was almost such as to preclude escape from infection, and I believe, but for the re-vaccination, this girl would have suffered terribly.

As there were many thousands of persons re-vaccinated at the Dublin dispensaries, if re-vaccination had not been an almost certain preventive of small-pox, we could scarcely have been without many more cases occurring in vaccinated persons. There were several cases of so-called re-vaccination, where the operation must have been performed after the invasion of the disease, all these cases proved fatal, and I have published an account of them in the *British Medical Journal*, August 31st, 1872. There were three patients said to have been re-vaccinated. One of these I had little doubt of, as she was an old nurse in a family where I had attended a small-pox patient, whom she nursed, and for whom she washed. Her attack was slight, and the eruption was almost confined to the

wrists, which had been chapped during the cold weather. Two patients had been previously affected by small-pox, one of them having had confluent small-pox, and in consequence was deeply pitted. They were both mild cases, but one, a patient whom I had once treated for fever, and who had chronic disease of the spine, was very slow in recovery.

The number of cases in each class and the influence of sex are shown in Table V.

TABLE V.

SEX	DISCRETE			CONFLUENT			PURPURIC			TOTAL			
	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality	Total	Recovered	Died	Per cent. Mortality
Males	261	8	1.1	132	61	46.2	27	23	85.2	420	333	87	20.7
Females	199	4	2.0	105	52	50.0	22	19	86.3	326	251	75	23.0
Total	460	7	1.6	237	113	47.6	49	42	85.7	746	584	162	21.6

From this it appears that there were considerably more males than females treated during the epidemic, and I believe there were really more males than females affected in Dublin, but as we had greater accommodation for males, and as the young male children were treated in female wards, our statistics cannot be considered to throw much light upon the relative influence of sex in this disease. The mortality among females is higher (23 per cent.) than among males (20.7 per cent.) This is true not only of the total mortality, but also of the mortality in each class, as shown by the table, it being slightly higher for females than males. Not only was the mortality among females greater than among males, but also the severity of the disease was greater, the proportion of confluent cases being larger, as shown by Table VI.

TABLE VI.

	MALES.			FEMALES		
	Total	Confluent	Per cent.	Total	Confluent	Per cent.
Vaccinated	338	76	22.5	273	67	24.2
Unvaccinated	82	56	68.3	53	38	71.7
Total	420	132	31.4	326	105	32.2

Even vaccination was less protective against confluence in the females than in the males. This is remarkable, as in every other institution of which I have had an opportunity of examining the statistics, the reverse is the case, the mortality among males being the higher.

The ages of the patients, and the mortality at each age, are shown in Table VII.

TABLE VII.

Ages	Total	Per cent. at each Age	Vaccinated	Per cent. Vaccinated	Died	Mortality per cent.
Under 5 - - -	26	3.5	10	38.5	16	61.5
5, and under 10 - -	54	7.2	39	72.2	14	25.9
10, „ 15 - -	133	17.9	116	87.2	22	16.5
15, „ 20 - -	210	29.5	181	86.2	25	11.9
20, „ 30 - -	239	32.0	199	83.3	53	24.3
30, „ 40 - -	45	6.0	35	77.8	14	31.1
40, „ 50 - -	29	3.8	22	75.9	11	37.9
50, and upwards - -	10	1.3	9	90.0	2	20.0

From this it appears that the most fatal age is under five years, and the least fatal between fifteen and twenty. Of those above fifty the mortality is low, but the number of cases is too small to draw any positive conclusion from. The difference in mortality at different ages does not depend altogether on the proportion of vaccinated cases at these ages, the proportion being about the same at all ages between ten and thirty.

There were nine cases in children under one year, of these three were vaccinated.

One male, aged four days, vaccinated on day of death, purpuric, died.

One female, aged seven months, vaccinated, discrete, recovered.

One female, aged five months, vaccinated, discrete, taken away by mother; probably recovered. Of unvaccinated cases there were:—

One male, aged six weeks, confluent, died.

One male, aged seven weeks, discrete, recovered. This child's



mother was re-vaccinated shortly before its birth. Vaccination took well, and probably affected the child previous to birth.

One male, aged six months, confluent, died.

One female, aged seven months, discrete, died.

One female, aged two weeks, unvaccinated, discrete, died.

One female, aged three months, confluent, recovered.

Of the complications that arises those of the respiratory organs were the most frequent and fatal; in fact inflammation of the respiratory passages was the common cause of death early in the disease except in the purpuric cases. The most important affection of the respiratory organs was laryngitis, which was more or less present in all confluent cases, and proved fatal in many. The first indication of this affection was hoarseness, followed in the severer cases by sudden attacks of difficulty of breathing when drinking. The sudden difficulty of respiration while the patient was taking a drink, or, as the nurses say, "going against his breath," was a sign of serious import, and in the large proportion of cases indicated a fatal termination. This must be distinguished from a difficulty of swallowing, owing to tenderness of the throat from presence of the eruption in the fauces. In all severe cases there was considerable bronchitis. In a few cases there was pneumonia, or inflammation of the lungs; in one, otherwise mild, case, pneumonia proved fatal; but in this, probably the pneumonia was not a result of, but a prior condition to the small-pox. Pleuritis occurred in several cases, and in one proved fatal. Two patients, who previously had pulmonary consumption, had mild attacks of small-pox, and both recovered. Several cases had pericarditis, and all recovered; two of them were severe cases, having had confluent small-pox. It is remarkable in how few cases were the eyes severely affected, and in not one case was the sight lost. All the confluent cases had more or less inflammation of the conjunctivæ, but in only one case did serious damage result. In one child under my own care, the eyes were severely affected, so much so, that I fear had the poor child recovered she would have been blind; but this being a bad confluent case (unvaccinated, and in a child of only four years), proved fatal. It is worthy of remark that in all the cases (with few exceptions) where the eye affections were troublesome or tedious, the patient had previously sore eyes—or "weak eyes," as they generally said—in fact, ophthalmia. I believe the reason why small-pox proved less destructive to the eyes in the past than in previous epidemics is that ophthalmia had become less common than formerly. The affection

of the nose can scarcely be looked upon as a complication, although sometimes troublesome ulcerations followed the disease. The mouth was usually affected by the eruption, and in some cases the sores remained for a long time, seriously impeding convalescence in one case. In a girl who had a tedious convalescence, a large ulcer about three-fourths of an inch in diameter remained in the centre of the tongue for nearly three weeks, and when healed left a hard white cicatrix. The sores on the skin in this instance were unusually slow in healing. Salivation with or without swelling of the salivary glands occurred in all the confluent, and in many discrete cases. Those cases where the swelling of these glands was considerable, were usually favourable in the result.

In some the ears were affected by inflammation; and suppuration of the internal ear occurred, destroying the hearing, but in no case was the power of hearing lost in both ears. In most cases the ear affection came on towards the close of the acute stage of the disease, or after the acute stage had subsided, as a sequela, at the same period as boils and abscesses, which were frequent but not serious sequelæ.

The affections of the nervous centres were not very troublesome; as a rule the chief complications of this kind were delirium and headache, which were always present in the confluent cases, scarcely ever in the discrete, and seldom in the purpuric cases—the absence of delirium in the latter class was very remarkable, considering the severity of the disease. The delirium was usually not dangerous, but troublesome, the patients insisting on wandering about, but generally returning to bed quietly, when ordered to do so; however, there were several cases of a serious character, when the patients attacked their nurses and fellow-patients in a savage way. One patient succeeded in securing the door of the ward against the nurse, breaking the window-bars and sashes, and jumping from the window, all in the space of a few minutes. One night, when visiting the hospital at eleven o'clock, p.m., at the height of the epidemic, I found no less than six delirious and dangerous patients all attempting to escape, attacking the nurses and porters. After an hour's work, with the assistance of the apothecary, I succeeded in getting them to bed in a comparatively quiet state. Such patients were generally found to have been of intemperate habits, and generally suffered from great debility. Special complications were not common. A few were attacked with cerebro-spinal meningitis, and at least two died from this affection; the cases otherwise not being severe. Stomach and bowel complications were not usually severe.

The vomiting which usually ushered in the disease was sometimes persistent, but never serious. Diarrhœa sometimes proved severe, but in no case did it seem to be the material cause of death. In only a few cases did it threaten the lives of the patients.

Bed-sores were not of as frequent occurrence as might have been expected, but in several cases where they did occur, the sloughing was most extensive, and the cases terminated fatally. Two instances were especially remarkable: in one of these the sloughing covered an enormous surface of the back; in another, a purpuric case, extensive sloughing took place after but two days' residence in hospital, but here there was also mortification of the legs; in neither of these cases could the sloughing be called ordinary bed-sores. Gangrene, or mortification, complicated some cases; in general this was of a superficial character, especially in the soft part of the fingers and toes; but in one or two instances it was deeper; one patient, a baker, under my own care, lost two toes by this complication; and in the fatal purpuric class gangrene seemed to be always more or less present. In one instance scarcely any part escaped except the trunk and features of the face; the hands and arms, feet and legs, nose and ears, and genital organs, all fell into a state of mortification; the patient turned absolutely black; almost all the cuticle peeled from him, and he exhaled a horrible stench; dark streams of blood exuded from several parts, and he bled from all orifices of the body. He was of extremely intemperate habits. I had twice treated him for delirium tremens, and once for typhus fever; he was drunk when admitted, but retained consciousness to the last. Several cases were complicated by pregnancy, and of those who were confined during the disease all but one died. One woman in the eighth month of pregnancy passed safely through an attack of severe discrete small-pox. All the children died. One woman came under my care who had been confined before admission. This was a severe case, with serious uterine hæmorrhage, but no black spots. She recovered after a tedious convalescence. I have since heard that she died in her next confinement, eleven months after her discharge from hospital.

ART. III.—*Lessons from General Practice.* By SAMUEL T. KNAGGS, M.B., Ch.M., F.R.C.S.I., L.K. & Q.C.P.I., Honorary Surgeon Newcastle Hospital, N.S.W.; Assistant-Surgeon N.S.W. Naval Forces.

CASE I.—*Case of Retention, followed by Suppression, of Urine, lasting Seven Days—Recovery—Observations.*

J. G., shoemaker, aged forty-five years, living in a suburb near the city of Newcastle. He had been drinking for six or eight weeks. On Sunday, 31st March, 1872, he found himself unable to micturate, but did not suffer any inconvenience until the Tuesday evening following, when at seven p.m. I was hurriedly requested to see him, the case being described as a most urgent one. I found him lying on his back in bed, suffering great distress; pulse 90; respiration hurried; the skin moist and clammy; countenance pale and anxious. He was complaining of great distension in the region of the bladder. He had been vainly endeavouring to urinate, and he described the agony that he suffered as being unbearable. I at once put him into a warm hip bath, which seemed to relieve the most urgent symptoms; while there I made him try to pass water, but the endeavour was fruitless. I then attempted catheterism, first trying most cautiously to insinuate No. 9 gum elastic catheter. It passed as far as the prostate gland without obstruction, and there it stopped. All the usual manœuvres, such as inserting the finger into the rectum, withdrawing the stilette (Hey), depressing the hand, &c., were tried fruitlessly. After a most patient trial I likewise failed to pass Nos. 6, 4, and 2. The warm bath, however, seemed to cause an abatement of the most urgent symptoms. At nine p.m. I again saw the patient, in consultation with Dr. Harris. Though somewhat distressed with the feeling of distension about the cystic region, the more urgent symptoms had not returned. The cystic dulness reached almost up to the umbilicus, the prostate gland was found to be very much enlarged, and the cystic tumour was plainly perceptible through the anterior wall of the rectum. Catheterism again failed. We decided upon trying to induce a free action of the bowels; in the event of this failing the propriety of operative interference could be considered next day. Urgent symptoms, if arising during the night, to be treated by hot stupes and warm baths.

Twenty grains of calomel were at once given in four pills, to be followed hourly by two-ounce doses of black draught until the bowels should be moved.

Fourth day: Wednesday, 3rd April.—I visited the patient at daylight, and found that the pills remained down, but every attempt to take any of the draughts was frustrated by incessant vomiting. The patient had been up several times during the night in great pain, unavailingly endeavouring to pass water. After each fruitless effort he found considerable relief by remaining half-an-hour in the warm bath. Upon examination I found that the cystic tumour had considerably subsided. He complained less of the feeling of distension than he had done the day before. I made a careful examination of the bedding and clothing, but could detect no evidences of his having unconsciously passed water. Symptoms of uræmic poisoning appeared to be setting in, the pupils becoming contracted, an inclination to drowsiness, slight wandering of the mind, and great irritability of the stomach. At ten a.m., according to appointment, I again met Dr. Harris in consultation with reference to the case. By this time the symptoms of uræmia *had* become more decided. The patient could with difficulty be roused from the comatose state into which he had fallen. There was incessant vomiting of a greenish watery fluid in copious quantities, having a fœtid urinous odour. The skin was moist and clammy; also exhaling an odour similar to the vomit.

We decided that the time for operation had passed, the abdominal tumour having all but subsided. Catheterism again failed. It being considered very desirable to produce free action of the bowels, croton oil, in two-minim doses, was ordered every hour until the bowels should be moved, the oil to be placed upon the tongue. This caused such aggravation of the vomiting and thirst that it had to be discontinued after the second dose. In the afternoon the patient was still stupid and comatose, yet could be aroused on his attention being attracted. He said that he had had a beautifully quiet sleep, and now had no pain in the bladder. Catheterism was again tried while he was in a warm bath, but failed. He expressed himself to be greatly relieved every time he got the bath, but in this instance he fainted on getting out of it to go to bed. I now made what I feared would be the last attempt to evacuate the bowels, administering at once a turpentine injection, but his weak state was such that it caused no action of the bowels. I, accordingly, followed it up with about two pints of warm water,

which so distended the bowels that it was almost instantly ejected. Half-an-hour afterwards he was relieved of a fair solid motion, but he fainted on getting off the stool. This so dejected him that he settled his worldly affairs, having a firm conviction on his mind that he could not possibly outlive the night.

**Fifth day: Thursday, 4th April.**—Patient very weak and low spirited; slept during the night, but wandered greatly in his mind; excessive watery vomiting; profuse clammy perspirations, the excretions having all the same urinous odour. He has not had a morsel of food since last Saturday, and has not passed water since Saturday morning. He has a firm conviction on his mind of approaching death, and says that he will surely die this evening. He is so weak that the least effort produces fainting. There is an inclination to stupor, no actual pain, and the bladder is flaccid.

**Sixth day: Friday, 5th April.**—I tried to induce him to consent to go to the hospital, but his friends objected, preferring him to die amongst them. His appearance much the same as yesterday, but he was much weaker, and hardly able to raise his hand. Another enema was administered, which returned stained greenish black. He said that this relieved him greatly, but the increased vomiting, cold perspirations, and stupor appeared worse.

**Seventh day: Saturday, 6th April.**—Had a quiet night. Begged to be left quiet on his back, as each movement produced excessive retching. At two p.m. injected per rectum a pint of strong beef-tea and two glasses of brandy. He felt almost immediately much stronger. To be continued every four hours.

At seven p.m. he passed a chamberful of water, giving a strong alkaline re-action, after which there was less inclination to vomit. I ordered a draught, containing two grains of oxalate of cerium, one minim of creosote, two minims of dilute hydrocyanic acid, and two drachms of mucilage of gum arabic, with water, to be taken every hour.

The above draught was designed to allay the vomiting and irritability of the stomach. I again saw the patient that night, when he expressed himself as feeling like a "new man." He rapidly improved from this out, and in a week was able to walk about.

*Observations.*—This case in itself is remarkable, from the fact that the patient, a broken-down, debilitated subject, survived seven days without passing a drop of water from his urinary bladder, and ultimately recovered. It possesses a further interest, from the fact

that nature came to the rescue of the physician, and indicated a rational procedure in the treatment. The gastro-intestinal tract and the skin took on vicarious action, as was indicated by the copious watery vomitings and profuse perspirations exhaling a peculiar urinous odour. These organs (stomach, intestines, and skin) voluntarily gave their assistance to the kidneys, and performed their functions while their (the kidneys') portals were stopped, and thus relieved the blood of urea and such effete products as would have accumulated in the system, and have literally poisoned the patient.

The mechanism by which the bladder was relieved of its contents on the fourth day can, I think, be fairly explained, as well as illustrated, by our physiological researches in the study of Asiatic cholera. In Asiatic cholera a prominent symptom is the copious rice water evacuations by mouth and rectum; these are thrown out in such vast quantities, and so greatly exceed the ingesta, as thereby to excite surprise as to where the fluid all comes from. Actual experiment has proved that several changes take place in the blood which supplies this fluid. Being deprived successively of its water, its salts, and albumen, then the properties of the corpuscles become changed, and they in turn *rob the tissues through which they permeate of their watery constituents*. There is no obstacle to our assuming that a somewhat analogous change took place in the blood of the patient whose case is under consideration. The gastro-intestinal tract and skin by energetically taking on vicarious action deprived the blood of water, urea, chloride of sodium, as well as other effete matters. The blood having become physically changed in its properties, the corpuscles absorbed the necessary watery constituents from the tissues; the bladderful of fluid in its turn became a reservoir, and, for the time being, recouped the tissues with the necessary moisture by yielding up its contents. Thus can be explained why, though the bladder does not physiologically possess absorbent properties, the absorption of its contents actually took place in this instance.

This case I deem a most instructive one, and if the lesson which it inculcates be carefully studied, and the hints which it suggests be followed out in a spirit of scientific inquiry, it cannot but be productive of much good, and materially modify our treatment of urinary retention and suppression.

CASE II.—*Case of Hydatids of the Liver—Operation—Relief—Observations.*

R. P., engine driver, aged forty years, was in perfect health about four years ago. Since then he has noticed a gradual and painless enlargement of the abdomen, which first commenced on the left side. The growth appeared originally to have extended from above downwards; of that he was quite confident. Never had any disturbance of the liver. Has occasionally had loss of eyesight and vertigo, which came on suddenly without being induced by violent exertion, or any such cause. In March, 1872, he had a fall which made him feel faint, and then a change occurred in the shape of the tumour; it used before to give him a sensation as though dragging down from his right side; he now feels as though he were filled from below upwards. Is troubled with wearying pains in the loins and local pains across the back, but attributes all this to the weight he is carrying in his abdomen, which now feels so tense that he has a difficulty in drawing his breath. Has been in the habit of drinking varieties of water from water-holes, when out shooting with his dogs. Remembers one instance which happened about seven years ago. He was lost on the Kela Plains, and when in an exhausted condition from want of water, his dog found a water-hole for him. He drank greedily of this, though alive with vermin, which were preying on the debris of dead and decaying animals which had perished in it. He has lived always freely and well, but never took fermented or spirituous liquors to excess.

The personal appearance of the patient is that of one possessing a well-built frame firmly put together. The complexion is sallow, somewhat swarthy, the hair and eyes dark. On close examination a slightly jaundiced tinge of the skin and conjunctivæ can be detected. The chest is ample and symmetrical, expanding freely and equally in the process of respiration, exhibiting no abnormal signs to auscultation and percussion. The pulsations of the heart are quite natural in rhythm but weak in force, both sounds distinct and natural. Pulse 76 to 80, weak, but not unnaturally so. Over the abdomen some veins are prominent, and a fulness is noticeable in the veins of the lower extremities, but nothing of a varicose condition observable. There is no history of any form of hæmorrhage having occurred from any of the outlets.

The urine is copious in quantity, pale in colour, of slightly acid re-action; specific gravity 1008, and has the most remote trace of albumen. The tongue is thickly coated with thick brown fur; he



complains of continual thirst, and great loss of appetite; the bowels are obstinately costive. The most characteristic feature presented by the patient's personal appearance is the abdominal tumour, which gives him a peculiar carriage and gait, causing him to hold his shoulders well back, so poisoning his person as to counter-balance the load in his abdominal cavity. The general contour of the tumour is identical with that of an enormous ovarian tumour in the female.

The abdomen was carefully examined while he was in the supine position. The circumference of the body at the umbilicus was forty inches. Four distinct tumours could be detected, three in the right side and one in the left. Those in the right were almost vertically situated with reference to one another. They were somewhat oval in shape, their longer axis lying transverse to the axis of the body. The following were respectively the extent of surface perceptible to palpation and palmation by each tumour on the right side, enumerating them from above downwards:—Five inches by three and a half inches; four and a half inches by three inches; three and a half inches by two inches. The uppermost tumour was in the right lumbar region, its lower margin just above an imaginary zone bisecting the umbilicus; the lowest tumour was so situated as to be equally divided by the imaginary line that separates the right inguinal from the hypogastric region. The intermediate tumour was midway between the other two, but more towards the median line of the body. The fourth tumour, which presented to palmation a surface of four and a half by three inches, was situated on the left side, lying in the left inguinal and hypogastric regions, having its long axis lying obliquely and in a line almost parallel with Poupart's ligament. All these tumours appeared to have a uniform smooth surface, and on palpation conveyed an impression of solidity no doubt deceptive. Now, though for convenience of description, these have been described separately as tumours, careful examination proved them to be portions of a large fluctuating tumour that occupied the whole abdomen of the patient. No definite outline could be detected so as to map out the full extent of this tumour. The whole abdomen was equally tense and elastic, affording a distinct sense of fluctuation, and it did not alter its shape on the patient changing his posture. There was dulness to percussion on the anterior aspect, slight resonance on the left side, and high up beneath the diaphragm. At the right side in front the dulness caused by the tumour merged into the normal liver dulness, and extended up almost to a line with the fourth rib.

On 11th July ('72), I saw the patient with Dr. C. W. Morgan, of Bathurst, who being interested in the subject of hydatids, very kindly acceded to my request for a consultation, and coincided with me in the diagnosis of the case. Symptoms of pressure were now becoming so urgent that the patient begged for relief by operation, which he willingly consented to undergo, after the object and risks of tapping were fully explained to him.

On the 14th July I performed the operation at the patient's residence. Drs. Morgan and Harris were kind enough to be present and to assist me. I proposed to tap the abdominal parieties through the linea alba, two and half inches below the umbilicus, and with that object made a small incision through the cutis vera with a lancet, and then plunged in a trocar, sheathed in a cannula a quarter of an inch in diameter.

It passed freely through the abdominal parieties, and the point impinged upon a hard resisting body, through which no amount of reasonable force seemed capable of propelling it. The trocar was withdrawn, and a few drops of ascitic fluid flowed out through the orifice of the cannula. The hard substance was carefully probed through the cannula with the stylette of a No. 9 catheter, and it conveyed such a sense of fibrous hardness that it was decided not to use undue violence in order to perforate it. The cannula being withdrawn and the wound closed up, I next proceeded to tap through the linea alba, one inch above the umbilicus, first making a pilot incision with an ordinary bleeding lancet, which I plunged into the hilt; withdrawing this I rapidly introduced the trocar and cannula, and was rewarded by seeing a thick, dirty, brown, opaque fluid gush from the cannula on withdrawing the trocar.

Twelve pints of this fluid were evacuated to the patient's relief. I was fortunate enough to secure a collapsed hydatid sac measuring two and a half inches long, which insinuated itself through the cannula. Some little difficulty was experienced by a slight hernia of omentum which protruded through the incision on the withdrawal of the cannula. Finding its reduction impossible, I snipped it off with a pair of scissors; the slight bleeding that followed soon stopped, and then the wound was closed with a wet pad, which was securely fixed by a bandage round the body. The patient was left in a recumbent position, and six hours afterwards a hydragogue purge containing scammony and jalap was administered. No disagreeable after effects resulted from the operation; the only unpleasant sequel being excessive thirst, which lasted several days. Four or

five days afterwards the patient was able to get up and walk about, I fear rather too soon, as on the sixth day I was requested to see him in consequence of excessive itchiness about the orifices of the wounds, which were surrounded by an erysipelatous rash. Rest and attention to the bowels soon relieved him of this; he gradually got better, and was soon able to resume his post at the locomotive engine. I saw him lately, and he, though not much reduced in size, expressed himself to be quite comfortable, and well able to perform his duties.

*Contents of the cyst.*—I carefully examined the fluid evacuated from the tumour. The quantity was exactly twelve pints, specific gravity 1020; it gave a slightly acid reaction, was so highly albuminous that it thoroughly coagulated on boiling; a large quantity of bile was present, the fluid staining white surfaces a bright yellow colour, and readily reacting to the nitric acid and Pettenkofer's tests. I made a most searching microscopic examination of the fluid, but could not find the slightest trace of hooklets, or other *debris* of broken down ecchinococci. All that could be noticed were a quantity of granular matter, oil globules, and numerous crystals of phosphate of lime. When left standing for some considerable time, a light coloured sediment was deposited which, on chemical examination, proved to be an admixture of sebaceous granular substance and phosphate of lime. I should have had no positive evidence of the tumour being a hydatid one, were it not for the cyst wall that so fortunately insinuated itself through the cannula during the operation of tapping.

*Observations.*—This case is a very good illustration of a multiple hydatid tumour, the principal cyst of which had undergone the atheromatous transformation described by Laennec, Brewster, Cruveilhier, Charcot, and others, and which was first observed by Ruysch of Amsterdam, in the seventeenth century. Davaine has looked upon the presence of cholesterine as being of general occurrence in such cases, but here it was absent. Neither could I find any trace of hæmatoidine or sugar, the former of which is described as being peculiar to hydatids of the liver.

Taking into consideration the circumstances of the case, they are compatible with the supposition that this is an instance in which nature had attempted a spontaneous cure by the introduction of bile into the interior of the cyst. The bile, no doubt, obtained admission through a communication set up between the biliary ducts and the cyst wall, and its prolonged contact with the contents of

the cyst was fatal to the existence of the hydatids. This action of bile on the vitality of the *ecchinococcus* is so well known that the injection of ox-bile into such tumours has been proposed as a radical cure for the disease.

Notwithstanding the unfavourable prognosis in hydatid disease, I deem this to be a most favourable case of its kind, and in which the principle of non-intervention in the way of further operation is strongly indicated. Atheromatous degeneration having commenced, layer after layer of sebaceous matter is deposited on the cyst wall, and by concreting, it so thickens the wall as to make it rigid and non-distensile. By tapping there could be no prospect of causing contraction of the cyst wall, which would soon again be filled with the albuminous fluid secreted by its lining membrane, and thereby weaken the patient's system by robbing his blood of some of its most useful constituents. At the same time this rigidity of the cyst wall does good, as its non-distensibility prevents a further increase in the size of the tumour. In this case I have decided on no further operative interference as long as pressure symptoms do not occasion serious inconvenience.

A lesson to be deduced from this case is, the necessity of making a careful chemical and microscopical examination of the contents of abdominal cysts when they have been tapped. Had this case occurred in a female, its almost identical appearance with an ovarian tumour might have misled even a cautious practitioner, and an erroneous diagnosis would be apparently verified on tapping by the appearance of a "dark coloured highly albuminous fluid," which is considered by some to be pathognomonic of the ovarian disease.

### CASE III.—*Interesting Sequel to Operation for Ovarian Disease.*

With reference to the successful case of ovariectomy reported by me in a previous number of the Journal (February, 1873), I wish to state that the patient enjoys most perfect health, and has regular painless menstruation every month. At that period the lower part of the wound (where the pedicle was clamped) re-opens, and from it there is an oozing of blood during the three days that the catamenia last.

**ART. IV.—On the Generation of Typhus Fever by Overcrowding.**

By JAMES MARTIN, F.R.C.S.I., &c., Physician to the Portlaw Hospital.

ABOUT the middle of September, 1872, an epidemic of measles set in, in Portlaw, no case having occurred for several years previously.

The summer had been healthy, and no case of typhus fever had occurred for six or seven months. Early in October, the weather being damp and foggy, measles had reached nearly every house in the town, over 450 cases being registered before the 1st of Nov.

Every practitioner knows the prejudice the poorer classes entertain against the practice of cleanliness during an attack of measles, it being impossible to persuade them to change the clothes or wash the person of the sick. Further, amongst a working population the beds are almost always overcrowded. The consequence therefore was, that three or four children ill of measles often lay in the same bed for ten days or a fortnight, without any ablution or change of bed clothes or garments.

The second week in October four children lay ill in one bed, all being very dirty. They were tended day and night by their mother, who took what sleep she had in the same bed. After ten days had elapsed from the setting in of the measles, the mother was seized with very malignant maculated typhus, under which she sank on the eighth day.

At the same time, in a house about 200 yards distant, with which no communication could be traced, six children lay ill also of measles. In this house the beds were tolerably clean, but fifteen persons, young and old, slept in four beds. The eldest daughter, aged eighteen years, who had measles some time before, took ill of fever, was admitted into hospital, and passed through a heavy attack of the maculated type. Each of the children, as they recovered from the measles, took the fever, were admitted to hospital, and were all maculated. The parents and grandmother, whom I remember to have had maculated typhus in past years, escaped.

At the same time also, in a clean, fairly ventilated, roomy house, fully a quarter of a mile distant from the two former, a woman, just a week after her confinement, lay in the same bed with four children in measles, trying to nurse them herself. After a week or ten days she became ill with fever, and died on the tenth day, being also maculated. No communication could be traced between

this family and either of the two former. I could follow up these statements with the history of six other families where fever seized on the members, who, having had measles before, were similarly exposed to the bad effects of dirt and overcrowding, but typhus having been then established in the town, I could not be sure of the freedom from communication with infected cases. All the cases of typhus, eleven in number, recovered well, except the first, which was exposed to the dirt poison in a most concentrated form, and refused to go to hospital; and the third, who was seized with the fever within a month after parturition. A marked feature in all the cases (which, with the exception of the two fatal ones, were treated in hospital) was the severe pulmonic symptoms under which they suffered.

The facts, 1st, that so many cases of typhus occurred under precisely similar circumstances, without being able to trace any communication between them; 2nd, that there had not been any typhus in the district for a long period, and that I could not discover circumstances to link them with cases occurring elsewhere—lead me to the conclusion that this outbreak of typhus was a clear case of *ochlesis* in the first three cases, and perhaps in several others.

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ART. V.—*Remarks on Nitrate of Potash in Acute Pneumonia.* By H. MACNAUGHTON JONES, M.D., M.Ch., F.R.C.S.I., L.R.C.S.E.; Extraordinary Physician, Cork Fever Hospital; Senior Demonstrator of Anatomy, Queen's College, Cork, &c., &c.

THE treatment of acute pneumonia being so often and so hotly made the subject of dispute, I venture to bring the notes (abbreviated) of some few cases under the notice of the profession, selected out of a large number which from time to time it has fallen to my lot to treat. It is unnecessary to make any remarks here on the various views adopted by so many eminent authorities on the treatment of this affection. These are fully expounded in the text-books of modern days, and all are familiar with the different plans of treatment and the particular remedies, such as tartar emetic, digitalis, quinine, veratria, aconite, alkalies, chloroform, which have each had their special advocates, as also the various methods employed for combating the inflammatory process locally, as depletion, counter-irritation, cold, cataplasms, &c. The therapeutic value of digitalis and quinine has been so frequently

demonstrated to my satisfaction, that I look on both, when given in sufficient quantities, as the two most powerful antipyretics we possess; the latter I have frequently given in doses of ten and fifteen grains every third hour, and that, at times, without producing any unpleasant symptoms. The effect on the temperature is, in my experience (if the drug be borne), certain and quick. I have several thermometric charts of febrile affections, intermittent in character and otherwise, with and without chest complications, which show at a glance this property of quinine, and I may merely add in passing, that my experience of its administration does not contra-indicate its trial and use in the large doses in which it has been recommended by some authorities. I might reiterate these remarks when I allude to digitalis. I have at the present moment a case of typhoid fever in hospital, in which the effects of digitalis in persistently lowering the temperature were well shown, and I have in several cases exhibited this drug in typhoid fever with a similar result. In cases of this disease complicated with pneumonia I look upon digitalis as particularly useful, especially in the later stages of the affection. Tartar emetic has the foremost place as an antipyretic in the treatment of pneumonia, and certainly its administration in this disease dates further back, and has had more startling statistical proofs adduced in its favour, than any drug of this nature. I have seen it administered with apparently a marvellous effect; but so also, I have been obliged, from its lowering and debilitating results (and in some cases from an idiosyncrasy on the part of the patient, contra-indicating its use, even in small doses), to stop its administration. Of late I have relinquished altogether the use of tartar emetic, and have treated nearly every case of acute pneumonia which I have seen *in the earlier stages* of the disease with nitrate of potash, in ten and fifteen grain doses, repeated every third hour, until it produced its peculiar effect on the temperature and pulse. I combine at times with it gr. i. of hippo and gr. i. of antimonial powder.

I have had cases in which I have given up the nitrate of potash, and resorted to quinine or digitalis, from complications which prevented its continuance, and some in which, the pneumonia being a secondary affection, it was of course excluded. Regarding the accompaniments of this treatment, diet and local measures to the lung, I must state, that I lean entirely to a free and generous support, and rather to the side of the stimulant system than the contrary. In fact, I must confess that I have no experience either

of general depletion or of a debilitating regimen, and the results of such modes of procedure I can hardly speak impartially of, as I have ever been more a follower of Todd and Bennett in the management of pneumonia than of the upholders of the lowering and depressing system. Not but that I feel certain I have seen equally injurious results follow from the blind and indiscriminate employment of stimulants as from the routine adoption of the calomel, tartar emetic, and depleting measures. I know many object to the employment of counter-irritants and vesicants in pneumonia. I can only say that my practical experience enforces on me the great value of these measures, and, as will be seen in the history of the following cases, this course was adopted in all with the best results. I find nothing so soothing as the linseed warm cataplasms kept constantly over the inflamed lung, more especially after vesication. These are my sole applications (*linseed poultices*) in the very early stage of the disease, but I believe nothing hastens resolution like a free vesicant, the surface then dressed, and all being covered with a linseed poultice, kept constantly warm. I give the notes of the subjoined cases briefly, as taken from the hospital books and my own temperature charts. One case is particularly interesting, as in it the temperature reached an extraordinary height on the seventh day. The temperature in these cases was taken nearly at all times in the axilla; at other times in the mouth. It frequently was taken with two thermometers at the same time, to correct any errors resulting from the instrument, the time taken in any given experiment varied; the average time being about seven minutes to ten. I regret that I often was unable to take the temperature more than once in the twenty-four hours; but the observations in these cases were made in the height of the small-pox epidemic in our hospital, when every spare moment was occupied in attending to those patients. I exhibited the charts containing the tracing of the temperature and the daily condition of the patient, his pulse, and respirations at the Cork Medical Society during the past session. It is unnecessary for me to go into any details of treatment, further than to state that the nitrate was administered in *all*, as I have stated above, and the general principles I have put forward carried out.

I have been struck by the fact that the effects on the temperature and pulse do not comparatively coincide in many cases. The temperature falls at first, without a corresponding decrease in the frequency of the pulse in proportion to the fall of the temperature,



which is sudden and rapid, so much so as to astonish one on making an examination; but once the pulse begins to fall it does so slowly and certainly, and the medicine, if pushed, will be followed by its characteristic effects, a slow and intermittent pulse. Now, in the majority of cases I find that the respirations decrease in rapidity, exactly in proportion to the pulse, but in pneumonia their number is so great that their decrease appears less, and the action of the medicine not so immediate as on the pulse and temperature. I need hardly say that when these full doses of the medicine are administered its effects should be carefully watched and its administration suspended, when such effects are manifested through the heart and circulation.

CASE I.—Daniel Sullivan, aged twenty-one; admitted to the Cork Fever Hospital on the 22nd February, 1872. First seen by me on the fourth day of the disease. Icteric tint in conjunctivæ, rusty expectoration, dyspnoea, dulness, and absence of respiratory murmur over lower lobe of right lung; pulse 112, respirations 36, temperature  $104^{\circ}4$ ; costive bowels; ordered diaphoretic and aperient; mustard and warm linseed cataplasms over lung.

24th—Pulse 108, respirations 50, temperature  $104^{\circ}5$ ; to get 15 grains of nitrate of potash every third hour. Not given regularly at night as the patient had some sleep.

25th (sixth day of disease)—Pulse 88, respirations 42, temperature  $105^{\circ}2$ ; continue nitrate, to be given regularly day and night.

26th (seventh day of disease)—Pulse 56, respirations 28, temperature  $100^{\circ}$ .

Eighth day—Pulse 56, respirations 28, temperature  $99^{\circ}$ ; nitrate now given but twice daily.

Ninth day—Pulse 44, respiration 24, temperature  $98^{\circ}4$ ; omitted nitrate; chlorate of potash and bark given; slight intermittence in pulse; heart's action slow and labouring.

Tenth day—Pulse 56, respirations 20, temperature  $98^{\circ}2$ . From this out patient became perfectly convalescent, and recovered rapidly without any unpleasant symptom. Nutriment—milk, beef-tea, chicken broth, and claret; vesicant over lung on fifth day, and linseed cataplasms continued subsequently.

CASE II.—James Barry, aged eighteen; admitted to the Cork Fever Hospital, on the 14th of March, 1872: fifth day of disease. Pulse 92, respirations, 30; slight cough, with rusty expectoration;

great distress of countenance ; dulness and absence of respiration over lower lobe of right lung.

On the sixth day, pulse 112, respirations 36, temperature  $106^{\circ}$  in the morning,  $105^{\circ}\cdot 1$  in the evening. Taking nitrate during the day, omitted at night by mistake of nurse.

On the seventh day, pulse 112, respirations 36, and on examination with the thermometer (which was a quarter of an hour in the axilla), I was surprised to find the temperature had gone up during the night to  $108^{\circ}\cdot 1$ . This fell to  $106^{\circ}$  before night, the pulse and respirations remaining as in the morning. Chest had been vesicated, and linseed cataplasms kept constantly on. Taking *mistura vini gallici* and claret alternately with beef-tea, chicken broth, and milk; fifteen grains of nitrate every third hour continued.

On the eighth day, pulse 96, respirations 30, temperature  $104^{\circ}\cdot 5$ ; nitrate continued during day time.

Ninth day—Pulse 64, respirations 30, temperature  $100^{\circ}\cdot 4$ .

Tenth day—Pulse 62, respirations 30, temperature  $97^{\circ}\cdot 4$ ; nitrate omitted.

The case, from this out, continued to do well, and was sent into the convalescent ward on the sixteenth day of the disease, with pulse 65, respirations 18, temperature  $98^{\circ}\cdot 2$ ; and was shortly afterwards discharged cured.

CASE III.—John Murphy, aged thirty ; admitted to the Cork Fever Hospital on the night of the 28th of January, 1873 ; complaining some days with feverish symptoms ; dulness over lower half of right lung, with slight friction sound ; also extensive bronchial breathing over both lungs ; great distress of countenance ; pulse slightly intermittent ; sputa viscid and frothy, with slight tinge of rust colour.

On 29th—Pulse 100, respirations 36, temperature  $105^{\circ}$  ; fifteen grains of nitrate of potash every third hour, with gr. i. of hippo.

30th—Pulse 100, respirations 28, temperature  $103^{\circ}$ .

31st—Pulse 84, respirations 28, temperature  $100^{\circ}\cdot 1$  ; continued nitrate given every six hours.

February 1st—Pulse 88, respirations 30, temperature  $101^{\circ}\cdot 4$  ; repeat nitrate.

2nd—Pulse 60, respirations 20, temperature  $98^{\circ}\cdot 1$  ; omit nitrate.

3rd—Pulse 56, respirations 18, temperature  $97^{\circ}\cdot 4$  ; diet and local treatment same as in last case.

In a few days he was up in the ward, and finally discharged from the hospital cured.

CASE IV.—Michael Donovan, aged twenty-four; discharged from the Cork Fever Hospital on 17th May, 1872, after typhoid fever, accompanied with pneumonia, in which there had been, up to the twenty-first day of the disease, a persistent high range of temperature, varying from  $101^{\circ}2$  to  $104^{\circ}$ . On the twenty-first day treated with fifteen grain doses of quinine, and on the twenty-second ten grain doses, every fourth hour, under which treatment his temperature fell from  $103^{\circ}3$  to  $98^{\circ}1$ . This was on the 7th of May, and he left hospital on the 17th.

Re-admitted as a fever case on the 9th of June. Pulse 120, respirations 42, temperature  $104^{\circ}$ ; bronchial râles over both lungs; bronchial sputa; ordered fifteen grains of quinine every fourth hour, to be omitted during night time, and twenty grains of nitrate of potash given at ten o'clock; mustard poultices to chest between the scapulæ.

10th—Pulse 120, respirations 36, temperature  $102^{\circ}2$ . Two ten grain doses of quinine and nitrate at night.

11th—Pulse 96, respirations 36, temperature  $104^{\circ}$ . Quinine to be given every fourth hour, and nitrate at night.

12th—Pulse 96, respirations 36, temperature  $102^{\circ}4$ . Two ten grain doses of quinine daily, and nitrate at night.

Same treatment continued until 17th of June, when the pulse had fallen to 84, the respiration to 20, temperature  $98^{\circ}5$ .

These cases show the action of the nitrate of potash in reducing the fever in acute inflammatory attacks of the lungs. I do not propose to discuss the method in which it cures the inflammation and arrests its progress, whether it be by promoting the absorption of its products through its action on the fibrin, or by a direct action on the blood through an effect on its corpuscles, or only a secondary influence by reducing the force of the fever, and lowering the force and frequency of the heart's pulsations. I am inclined, myself, to believe that it acts in both ways, and that the beneficial results which I have frequently witnessed coming on so speedily after its administration can hardly be altogether due to an indirect effect on the heart's action and on the general pyrexia. Nitrate of potash, in similar doses, has proved to me an invaluable agent in acute rheumatism, either by itself or combined with bicarbonate; and here, I think, we must look for an explanation other than above stated, and attribute its power to its direct action on the inflammatory blood.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Hand-Book for the Physiological Laboratory.* By E. KLEIN, M.D.; J. BURDON-SANDERSON, M.D., F.R.S.; MICHAEL FOSTER, M.A., M.D., F.R.S.; and T. LAUDER BRUNTON, M.D., D.Sc. Edited by J. BURDON-SANDERSON. London: 1873.

SUCH a book as this has long been a desideratum, and more so than ever now, when physiological laboratories are being founded by the universities, and when, as a consequence, we may expect that physiology will be taught practically, and looked on, not merely as an ornamental, but as an essential part of the education of a medical student.

The object of the work may be stated in the words of the editor. In his preface he says:—

“This book is intended for beginners in physiological work. It is a book of methods, not a compendium of the science of physiology, and consequently, claims a place rather in the laboratory than in the study. But although designed for workers, the authors believe it will be found not the less useful to those who desire to inform themselves by reading as to the extent to which the science is based on experiment, and as to the nature of the experiments which chiefly deserve to be regarded as fundamental.”

The authors divide the work among themselves as follows:—

Dr. Klein takes the histology, and gives the most complete description we have ever seen of the methods for the preparation and examination of all the tissues, simple and complex. Dr. Burdon-Sanderson writes on the physiology of blood, circulation, respiration, and animal heat. This is the most *readable* part of the book, not because the other parts are at all inferior to it, but because in the chapters “relating to the mechanical functions of circulation and respiration, where either man or the higher animals

must be for the most part the subjects of observation, and where consequently the conditions of experiment are complicated by the interference of the nervous system to an extent which it is often difficult to estimate, it has been found impossible to avoid entering somewhat more largely into theoretical explanations" than has been done in the other chapters, where is found only a purely objective description of facts and methods.

The physiology of muscle and nerve is treated of by Dr. Michael Foster. In this part "the object chiefly kept in view has been to limit the directions as much as possible to such observations and experiments as the student may reasonably be expected to perform for himself under due supervision. The ordinary phenomena of muscle and nerve are consequently dealt with at far greater length than are the properties of the central nervous system. The latter are, to say the least, but imperfectly known, the experiments on which our knowledge rests difficult and complex, and too often bringing out uncertain or even contradictory results. The former, on the other hand, may be studied with approximate exactitude; the methods of experiment and observation are becoming year by year more physical in character, and the observations themselves fundamental in their nature, and having the widest bearings in all the higher branches of physiology, may for the most part be conducted on frogs, may be repeated any number of times without difficulty or expense, and so serve usefully as a means of training students in physiological study and inquiry."

The chapters on digestion and secretion are by Dr. Brunton. Preceding these are two chapters on the albuminous compounds and on the chemistry of the tissues, and there is a most useful appendix, consisting of notes on manipulation. Altogether this part is by far the best English work in existence on physiological chemistry.

The book is illustrated with 123 plates, containing 353 figures, whose execution leaves nothing to be desired. They are mostly original, but some are taken from Sutton's work on volumetric analysis. The plates are bound separately from the text, an arrangement which has great and obvious advantages.

It is, of course, impossible for us to give any analysis of the contents of such a work as this, but we feel that we cannot recommend it too highly to our readers. To those who are engaged in physiological work, whether as students or teachers, it will be almost indispensable, and to those who are not, a perusal of it will

be by no means unprofitable. There is an idea too prevalent, that physiology is made up of a number of ingenious theories, developed out of the moral consciousness of German professors, and resting on a very slender basis of facts. A glance into the volumes before us will alter this idea, and, to any unprejudiced readers, fully substantiate the claim that physiology makes to rank among the experimental sciences.

*WORKS ON HYGIENE.*

1. *A Handbook of Hygiene.* By GEORGE WILSON, M.D. London: J. and A. Churchill, 1873. 8vo, pp. 280.
2. *Fourth Annual Report of the State Board of Health of Massachusetts.* Boston: 1873. Large 8vo, pp. 473.
3. *Second Annual Report of the Board of Health of the Health Department of the City of New York.* New York: 1872. Large 8vo, pp. 473.

DR. WILSON'S book makes its appearance at an opportune time, when public health officers are being appointed in large numbers in England and Wales. It affords information relative to a great variety of subjects of interest to the sanitarian, and gives a digest of the more important Acts relating to the public health. In a book of less than 300 pages it is not to be expected that such extensive subjects as food, water, air, ventilation, contagion, disinfectants, drainage, sewerage, hospitals, vital statistics, could be exhaustively treated: but Dr. Wilson has managed to give an amount of practical information relative to these quite sufficient for the purpose of the majority of health officers. The Report of the Massachusetts Board of Health contains, like its predecessors, several interesting papers relating to public health. Amongst the subjects treated upon are food and its adulteration, the dwellings of the people, infant mortality, sewerage and drainage, health of towns, the antecedents of consumption, and the causes which determine the excessive use of alcohol amongst nations. With respect to the latter subject the theory of Dr. Bowditch relative to the cosmic law of intemperance, and which has been elaborated in a former Report of the Board, has been attacked by Dr. G. W. Broad, of New York. This writer believes that the prevalence of

intemperance is far more influenced by race than climate. The Report of the New York Board of Health is a valuable record of the sanitary work performed in that city. To the reports issued by the health authorities of New York and Boston we are indebted for much of the material used in preparing our reports upon public health and sanitary science.

### WORKS ON MATERIA MEDICA AND THERAPEUTICS.

1. *A Hand-Book of Therapeutics.* By SYDNEY RINGER, M.D., Professor of Therapeutics in University College, Physician to University College Hospital. London: H. K. Lewis. 1873. 8vo, pp. 576.
2. *Notes on the Pharmacopœial Preparations (B. P., 1867), specially arranged for the Use of Students preparing for Examination.* By W. HANDSEL GRIFFITHS, Ph.D., L.R.C.P.E., L.R.C.S.E., Librarian Royal College of Surgeons in Ireland. London: Baillière, Tindall, & Cox. Dublin: Fannin & Co. 1873. Small 8vo, pp. 110.
3. *Posological Tables.* Second edition. By W. HANDSEL GRIFFITHS.

WHEN we noticed the second edition of Dr. Ringer's hand-book in January, 1872, we drew attention to what we considered the defects of the work, and we are still of opinion that we might reasonably expect a better exposition of our present knowledge from one holding the important position of Professor of Therapeutics in University College, and necessarily devoting himself specially to that department of our art. His hand-book, however, contains much useful information, and a reference to the Index of Diseases will not infrequently supply a practitioner with a hint for the selection of a remedy. It is not our intention to enter into any detailed criticism of this volume, but we cannot avoid drawing attention to a very homely, but as far as the comfort of the sick is concerned, an important matter; a really good poultice cannot be made even by "an experienced hand" in the manner Dr. Ringer directs; to make "a model poultice" the linseed meal should be gradually shaken into the water while it is still in a saucepan

on the fire, and the whole assiduously stirred, and allowed to boil, just as a housewife makes her porridge. By adding the meal to the boiling water in a basin, as the author directs, a poultice as hot as can be borne, no doubt, is produced, but it does not retain the heat at all as long as one made as we have indicated; and as the frequent renewals of large poultices to the chest and other parts is sometimes very fatiguing, it is desirable to make their change seldom necessary. To one other point the author will allow us to draw his attention. He gives minute directions as to the administration of enemata, but does not mention a precaution which our experience has taught us nurses very generally neglect, and the neglect of which leads to the rapid ejection of the enema, and its consequently inefficient operation. We commonly see nurses and students, having made their preparations, first introduce the nozzle of the discharge pipe into the rectum, and then begin to pump up the fluid. The effect of this is to throw up first the air contained in the apparatus, and if the ordinary long tube be employed this is considerable in amount; but, be it much or little, air is specially irritating to the bowel, and prevents it retaining the fluid sufficiently long to secure an efficient action of the enema. The operator should have the fluid flowing from the orifice of the injection pipe before he introduces it into the rectum.

We can confidently recommend Dr. Griffith's Notes to students who are trying to fix in their memories the constituents and modes of preparation of the articles contained in the Pharmacopœia preparatory to examination. His posological tables, which we noticed favourably some time ago, now appear in a second edition improved and amplified.

1. *Natural Philosophy for General Readers and Young Persons.* Translated and edited from *Ganot's Cours Élémentaire de Physique.* By E. ATKINSON, Ph.D., F.C.S., Professor of Experimental Science in the Staff College. London: Longmans, Green, & Co. 1872. Small 8vo, pp. 522.
2. *Notes of a Course of Nineteen Lectures on Natural Philosophy delivered at Guy's Hospital during the Session 1872-73.* By G. F. RODWELL, F.R.A.S., F.C.S., Lecturer on Natural Philosophy in Guy's Hospital, Science Master in Marlborough College. London: J. & A. Churchill. 1873. Small 8vo, pp. 166.

THE first of these works is designed to act as a text-book of physics for the middle and upper classes of boys' and of girls' schools,



and as a familiar account of physical phenomena and laws for the general reader. It is by the same author and by the same translator as the well-known larger "*Elementary Treatise on Physics*," which has both in France and in this country acquired an acknowledged position, and passed through five editions. In the volume now before us the use of mathematical formulæ is dispensed with, and every effort made to convey in plain language and by homely illustrations a knowledge of physical science. The work, which is freely interspersed with wood-cuts, consists of eight parts, which treat respectively of the general properties of matter and universal attraction, of hydrostatics, gases, acoustics, heat, light, magnetism, and frictional electricity. Some acquaintance with these subjects is absolutely essential for all students of medicine who aspire to a knowledge of the science of their profession, and we recommend this work to such of them as have not during one University course had an opportunity of thoroughly studying natural philosophy.

Mr. Rodwell's interesting and eminently practical little book is introduced to the world by the author in a very modest preface. It is a development of notes which were written for the class of natural philosophy, at Guy's Hospital, during the past session, and consequently the mechanism, so to speak, of the book is often rather peculiar, its subject matter being condensed and consisting largely of definitions. These are, however, invariably expressed in clear and most accurate terms, and are calculated to suggest to the attentive reader the best method of obtaining a thorough acquaintance with the sciences included under the generic term of "Natural Philosophy" or "Physics."

The first two lectures are devoted to the subject of "Statics," while "Dynamics" are dealt with in Lectures III. and IV. We are glad to observe that the author, recognizing the signs of the times, takes care on every occasion to direct attention to the metric system of weights and measures. He does not, however, run into the opposite extreme, and omit our English equivalents—an error which some writers, forgetful of the transition stage in all reforms, are prone to commit. The subjects treated of in subsequent lectures are:—Hydrostatics, hydraulics or hydrodynamics, pneumatics, light, heat, magnetism, static electricity, and dynamic or current electricity. But one lecture is devoted to the consideration of "Light," a fact for which the author apologizes in his preface, and which was due to the tone given to this course of lectures from the requirements of

the examination for the degree of bachelor of medicine in the University of London. What we do read touching this important subject in the lecture which treats of it, makes us the more disposed to regret that the author should have been thus fettered by circumstances.

On the whole the work will commend itself to every student of science, whether he is a graduate or an undergraduate, as a faithful epitome of the great facts ascertained by man in his experimental investigation into nature and her laws.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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THIRTY-FIFTH ANNUAL SESSION.

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JOHN R. KIRKPATRICK, M.B., Honorary Secretary.

DR. EVORY KENNEDY, President, in the Chair.

*Saturday, June 14th, 1873.*

*On Peri-Uterine Inflammation.* By H. S. HALAHAN, L.K. & Q.C.P.I., &c.

MR. PRESIDENT AND GENTLEMEN,—Every member of our profession, whose practice has been long and varied, cannot fail to have very frequently met with cases that have illustrated, in their character and progress, the worthlessness of special remedies, and the danger of attempting by any violent treatment to cut short disease; cases in which the drug is worse than useless, tending, perhaps, to the aggravation of general sickness, or to the production of symptoms that might not otherwise appear. It is possible, by the undue or needless exhibition of drugs, to double the difficulties of our curative task, we may have not only to cure our patient of his special disease, but to deliver him as well from the effects of our *treatment* of it. This may be admitted, without derogating in the least from the inestimable value of precise medicinal treatment in the *abstract*. It is a matter of great thankfulness that there are many diseases which we need but to recognize in order to know exactly how to deal with them; diseases that to the unlearned appear terrible and hopeless are often to our educated eye of small comparative importance. We know that (all else being right, the constitution naturally healthy, and the sick-watch careful and sustained), all will, humanly speaking, go on well. We shall have the doctor's "*exceeding great reward*"—the joy of giving health to the sick and happiness to the sorrowful; but there is no greater

test of our real ability as ministers of mercy to the suffering than our capacity of being able to determine respecting any case that may come before us, whether it is one that demands immediate sharp and sustained medicinal treatment, or one that requires rather careful watching, and dealing with symptoms as they arise. No man requires to have his self-love, pride, conceit, and mere love of applause more under control than a medical man. He is always tempted (from these causes) to name the disease, or state that such and such is or is not the fact. "What is it, Doctor?" is a question that is certain to be put by the sick or by some one about them. There are, of course, many cases in which he can give a direct and sure answer to the query; cases, for instance, of marked zymotic disease, or of others whose diagnosis is invariable; but the danger arises when he is brought (as he so often is) face to face with some type of malady that he cannot distinctly name where disease is working in mystery. The "what is it, Doctor?" in such a case as this is a temptation that he must be prepared for; for him of all men "there is a time to speak and a time to be silent," and it is a high wisdom when he knows the time. It is a higher wisdom when he not only knows it, but knows how to deal with it. It is possible for us to withhold precise information in respect of the character of a disease, and yet do so in such a way as to inspire confidence and hope, and heighten thereby the chances of ultimate success. It is also possible to do so in such a fashion that our silence may be regarded as evasion, indicating either ignorance or tacit sentence of death; but, however this may be, it is certain that we should not allow any hastiness to name a disease to others, or any mental precipitancy or tendency to rush ourselves at conclusions concerning its character to lead us to lay down from the first, a course of treatment that we determine *must* be right, because we are assured that *we* are right in the diagnosis from which we started. These remarks are not meant to be any further apropos to the case I am about to lay before you than that they illustrate a principle which I found applicable to it. The case to which I allude occurred lately in my practice, and is (I think) of sufficient rarity, interest, and instruction to be laid before you. I will do so, with your permission, by extracts from my note-book. A young woman, who had been eight months married, called upon me in last January, complaining of great pain in the lower part of abdomen, sickness of the stomach, great nervousness, and amenorrhœa for the past two months, together with a slight enlargement of the abdomen. She was very anxious to know whether she was pregnant or not. Upon questioning her I found that the sickness took place every morning, sometimes continuing throughout the entire day; that she had attacks of nervousness and slight shivering during the day; that the pain over the uterus was continuous, the bowels confined, the water scanty and high coloured, and the pulse 88. I first examined the breasts, which did not indicate pregnancy; then I passed

my hand over the lower part of the abdomen, and found there was great pain over the uterus, and in a considerable measure over the entire abdomen. I discovered also a fulness in the left groin, slightly painful. Upon examination per vaginam, I felt a distinct fulness, or tumour, at the left side; the uterus slightly enlarged, but otherwise normal. I would not, although pressed very hard both by herself and husband, say whether she were pregnant or not. I ordered her a slight aperient, together with a mixture containing spirits of lavender, aromatic spirits of ammonia, spirits of camphor, and tincture of henbane, which relieved her for a day or so. On the third day I saw her at her own house, she not being able to leave her bed with the sickness and pain in the abdomen, both having greatly increased since she was with me. Bowels had been freed; pulse 88; countenance pale and anxious; very restless and sleepless; ordered a poultice of bran over the abdomen, not too hot; to take pills, with calomel and opium; to continue the mixture, and to use the following drink, viz.:—An egg well beaten up, to which add one pint of good milk, one pint of cold water, and salt to make it palatable; let it then be boiled, and when cold any quantity of it may be taken. If it turns into curds and whey it is useless. I cannot give this drink too much praise. It has now stood the test of twenty-four years in my hands, and I must say that a marked success has accompanied its employment. You may give it in all forms of sickness of the stomach, arising from whatsoever cause. It is also an admirable drink for infants with choleraic diarrhoea. I also told her to take a glass of sherry in a bottle of ginger beer during the day. This drink often stops sickness of the stomach when other remedies fail.

From this to the seventh day nothing particular occurred, except that the sickness of the stomach was greatly relieved. On this day the left leg was painful and swollen, as were also the veins of the entire surface which were red and hard; ordered her to continue the pills and other remedies, drink, &c. On the tenth day diarrhoea set in, which necessitated the discontinuance of the pills. The left leg remained in the same state till the thirteenth day, when suddenly she complained of pain in the right groin and leg, which now became even worse than the left had been; and it was curious to observe that when the right one became affected the left one got well. There was a difference, however, between the two—as there was not any perceptible fulness in the right groin. The diarrhoea having ceased, ordered her to renew the pills, to continue other treatment as before. Shivering had gone on daily, I may say from the first, and the pulse ranged from 80 to 96. The lower extremities were cold; the breathing sometimes very difficult, and the heart's action feeble. The stomach was able to retain some iced beef-tea and chicken jelly, together with a small quantity of wine during the twenty-four hours. The pills were continued for three days, when diarrhoea again set in, which, however,

I do not think was owing to the mercury, but rather to the swelling in the left groin, which I afterwards discovered to be an abscess, bursting into the bowels; she, at all events passed pus from them. I discontinued the pills. The right leg became very large and painful, and the veins all over it as hard as whip-cord. On the nineteenth day I had the able assistance and advice of Dr. Churchill, who, upon examination, found the uterus fixed with the pelvis tilted over to the left side. He ordered the pills to be renewed, the lower part of the abdomen to be stuped and poulticed, and the leg to be wrapped up in medicated cotton wool, and to take as much nourishment as the stomach would bear. The pulse had risen and was now 110. For the next week she continued in much the same state. The pain in the leg being very great, extreme pain was experienced if the limb was touched. The sickness of the stomach only recurred at intervals, and she was able to take nourishment and retain it. I gave her bark in effervescence, and twenty grains of chloral at night, which caused her to sleep a little. Dr. Churchill then again saw her, and considered that she was, if anything, a shade better, but still in a very precarious state. On the thirtieth day she complained much of a pain in her right side, and great difficulty of breathing. I passed my hand over the painful part and found the liver enlarged and congested, and all the veins in the same state as those of the leg, great pain over them. The veins both in the legs and over the liver, gave me the idea as though they were injected with wax. The bowels kept regular; the urine was not so scanty; all through there was not much thirst. The pills were discontinued as the mouth got slightly touched. In two days after this, the veins all over the surface of the abdomen, chest, neck, and head, of the right side, became similarly affected. The right leg had by this time reduced greatly in size, the veins becoming softer and softer each day, till at length they became normal. No one could imagine the strange appearance she presented, the veins of the entire right side being prominent, hard, and quite plainly seen, and a blue hue all over the surface contrasting strongly with the other side. In three days she complained of great difficulty of breathing, and as if her heart was ceasing to beat, together with great annoyance whenever she lay on her back. I could not detect anything wrong with the heart, but, on examination, found her back to the right side presenting the same appearance as the chest. This state continued for four days, she during all that time taking a fair share of nourishment, such as beef-tea, jelly, wild fowl, and about eight ounces of wine daily. She now began to get better, and by degrees the veins all over the right side of her body put on a natural appearance. The moment she was able, I had her removed to the country, and now she is as well, or, as she says herself, better than ever. I have endeavoured to give an accurate account of this curious case without entering too much into details. I note particularly with respect to it, the following points of interest:—

1st. The sudden flight of the phlegmasia dolens from the left leg to the right, which was the more remarkable from the fact that there was an abscess in the left groin, which discharged itself per rectum, which would seem to indicate that the left side would be the one most seriously attacked. whereas, in point of fact, it became immediately well when the disease manifested itself in the right leg.

2nd. The fact of the veins of the portal system, as also the veins of the front and back of the chest and abdomen, becoming one after another affected.

3rd. That this woman had suffered from something of the same kind two years before, and I am enabled, through the kindness of the gentleman who attended her, to give you his opinion of the case. He says, "She suffered most severely from attacks of chronic phlebitis as I thought of the thigh and leg, amounting almost to phlegmasia dolens. This I connected in my mind with something uterine."

Since she has recovered she has menstruated, and the uterus is of a normal size.

DR. CHURCHILL said that, having seen the patient with Dr. Halahan, he would make a few remarks upon the subject. He thought then, and he thought still, that it was one of the most remarkable cases he had ever seen. First, there was the remarkable fact of the woman getting this phlegmasia dolens in such a marked form before she was married. That was not a common thing; and next, the sudden transference of the phlebitis from one leg to another. He was not sure that it did not throw some light on the true theory of phlegmasia dolens. He thought that those who looked on it as a retrograde process of inflammation from the uterus downwards fell into a mistake. He would rather adopt Mackenzie's theory that the cause which excites phlebitis traverses the circulation and then excites it in the limbs, and the occurrence of the phlebitic affection here in the veins of the chest, abdomen, and back, would bear out that view.

DR. KIDD said there was a case on which he and Dr. Churchill were consulted independently of one another. The patient was the wife of a medical man, who wrote a very graphic description of her condition, and occasionally consulted them by letter, and even by telegram. It was a case of peri-uterine inflammation, probably the result of some hæmatocele; and the point he would recall to Dr. Churchill's recollection was that the symptoms of phlegmasia dolens occurred first in the leg and afterwards in the left arm. It appeared to him that the phlegmasia dolens affecting the upper extremities threw some light on the pathology of the disease. Dr. McClinton published a case in which phlegmasia dolens, after attacking the left leg, attacked the right arm. With respect

to its occurring before marriage, he had himself seen it in an unmarried woman and in a man occurring as a sequence of fever. Its appearance first in the left leg and afterwards in the right leg was almost the natural history of the disease; in nine-tenths of the cases that was the course it took. It was said this was so because women lay on their left side in labour. Here was a case where the left leg was affected first and no labour, and the right leg affected afterwards—so that he did not think that explanation could hold good.

DR. HENRY KENNEDY thought there was a constitutional tendency in some individuals to phlebitis; he alluded to the form that presented itself in phlegmasia dolens. He had seen five or six cases of it which he could not account for in any other way. He had seen it after fever, phthisis, diabetes, and even in cases of cancer. He believed they would meet with constitutions that were, so to speak, given over to the disease, just as certain constitutions were liable to rheumatism or gout. The jumping from one side to the other was a very constant thing, as far as he had seen. He might mention that Trousseau had written a splendid essay on peri-uterine inflammation, in which he had touched on this affection in a masterly manner.

*A Case of Chronic Inversion of the Uterus in which Reduction was effected by Manipulation.* By GEORGE H. KIDD, M.D., &c.

DR. KIDD said he was consulted in December last by a lady, who handed him a letter from Dr. O'Meara, of Carlow, a portion of which he would read, as it gave a graphic account of the case. Dr. O'Meara's letter was dated the 5th November, 1872. He said—"She was confined four months ago and attended by a country midwife. She consulted me for the first time twelve days ago. On examination I found *inversio uteri*. It was caused I believe by dragging at the cord to bring away the placenta immediately after the child was born. She has been subject to hæmorrhage almost continually since her confinement. I have taken into account the possibility of the tumour being a polypus. I am of opinion it is not, but unfortunately a case of inversion. I desired her to remain in bed for some days after I saw her last. She has done so, and consequently feels so much better that she fancies herself quite well. I have not seen her for the last eight days, and cannot believe matters have altered spontaneously. On two or three occasions the organ protruded beyond the vulva. I have explained the serious nature of the case to the patient and her friends, and have recommended them to consult you." Dr. Kidd proceeded to say that when the patient consulted him he found a tumour in the vagina which, on careful examination, he found to be an inversion of the uterus. It was almost complete, that



is to say, the neck of the tumour was surrounded by a portion of the lip of the uterus, but not more than one-fourth of an inch in depth. A section of the tumour would present an appearance like the diagram which he now exhibited. He had some doubt as to whether he should call it a complete or an incomplete inversion; but it was as complete as any case he had seen; there was nothing but a small lip that had not been turned in. The woman was extremely pale and anæmic, and had a countenance expressive of very great suffering. She came into the Coombe Hospital, and after allowing her to remain in bed a few days, he tried to reduce the tumour. He put her under the influence of chloroform, and placing her on her back on the table, he introduced his hand completely into the vagina. He grasped the tumour in his hand, and compressed it for a few seconds, so as to empty it completely of blood. He then lengthened his fingers, and grasping the tumour between them and his thumb, and compressing it as much as he could, he gradually pushed it up into its place.

There were three methods of manipulation described for reducing an inverted uterus. One of these consisted in an attempt to push back the portion of the uterus which had last escaped; that is to say, to try to push back the narrow portion of the neck of the uterus, to push it up bit by bit, till you gradually get the fundus into its place. Another mode was to begin at the fundus and try to push it up with the finger or some instrument, re-inverting the tumour; and the third method, which was especially applicable to recent cases, consisted in re-inverting the horns of the uterus first, because it had been observed that the first displacement began at the horns of the uterus. This method was especially applicable to recent cases. He did not know that it had ever been attempted in a chronic case. The choice then was between beginning at the neck of the uterus and getting up the fundus last, or beginning with the fundus first. He tried the former method beginning at the neck, and pressing it up bit by bit, and finally getting the uterus into a normal position; it passed up slowly and gradually. It was stated in books that very often in such cases when the uterus is partly replaced, the remaining portion goes back with a bound. Such was not his experience. It went up bit by bit, as he pressed his fingers in. To make sure it had quite returned he passed his finger into the cavity and raised the fundus, so that it could be distinctly traced by the hand placed on the hypogastrium. The patient made a perfect recovery, and the only inconvenience she suffered was a slight laceration of the fourchette produced by the passing in of the hand. Though only a single case, he thought he was not the less bound to bring it forward; for it was important to bear in mind that some cases of inversion of the uterus can be reduced by manipulation, when they know that such formidable operations were recommended, as making an incision in the abdominal

walls, and dilating the inverted uterus with an instrument like a glove-stretcher, or making an incision into the substance of the uterus as it lies in the vagina, till you come down nearly upon the serous membrane, so as to allow it to dilate. These operations no doubt might be necessary, but it was important to know that many cases could be restored without them: and they should be reserved for very extreme cases, as no doubt the authors of both operations would themselves admit.

*Chronic Inversion of the Uterus; Reduction after seven months duration.* By G. JOHNSTON, M.D., Master of the Rotunda Lying-in Hospital.

E. C., aged thirty-five; married; has had five children (all her previous labours were natural), the last was born on the 1st of January, 1871; admitted into the Rotunda hospital the 25th July following, suffering from hæmorrhage caused by inversion of the uterus, which took place at her last confinement, and, as she states, must have occurred at the time of the expulsion of the placenta, as the person in attendance hurt her very much in forcing it off, immediately after which she had great flooding, so much so as to render her quite unconscious. However, she suckled her child for a period of six months, the hæmorrhage continuing more or less ever since her confinement, but has diminished since she weaned the baby.

On examination the uterus appeared protruding through the vulva, and on passing the fingers within the vagina about half-an-inch of the cervix was found uninverted, and could be felt distinctly encircling the tumour, which was five inches in length, with a diameter of nearly three inches.

On the 2nd of August, seven months after the accident had taken place, the patient was put under the influence of chloroform, and having been put on her left side in the usual obstetric position, Drs. Denham, M'Clintock, and Atthill assisting, the fingers of the right hand were introduced within the vagina, the inverted mass was grasped firmly at the cervix, and by degrees, and after some difficulty, reduced within the os, and, eventually, the uterus was completely restored to its normal position. There was no hæmorrhage during or after the operation, which lasted about twenty minutes, and as soon as she recovered from the anæsthesia she was given a full opiate.

On the 6th she was examined with the sound, when we ascertained it passed into the cavity about  $4\frac{1}{2}$  inches. There has been no hæmorrhage since, in fact she convalesced favourably and went home quite well on the 27th.

I have heard within the last three weeks that she continues in excellent health, menstruates regularly every month, and in the normal quantity.

DR. M'CLINTOCK said the cases just related were of great importance

as encouraging us to make diligent attempts at re-position of the uterus simply by the taxis. He was quite satisfied that in many cases, or in most cases, this manipulation, if judiciously and persistently carried out, would be effectual in replacing the womb, which, it was needless to say, was the most desirable way of treating mal-position—far better than cutting the uterus off. He was persuaded, both from some little experience and from careful consideration of the mechanism by which the re-position was accomplished, that the plan described by Drs. Kidd and Johnston, was best calculated to effect this object. There was a very close resemblance between this operation and the reduction of paraphimosis; and in the reduction of the glans penis the most important thing was to thoroughly empty the gland of blood and reduce its bulk. Here it was important to reduce the bulk of the uterus, to squeeze all the blood out of it and reduce its volume to the smallest possible dimensions. He was satisfied that the true way to set about reducing the inverted uterus was to adopt the method which Dr. Kidd had described—namely, beginning at the part of the uterus that had last descended. By doing so there would never be more than one flexion of the uterus; whereas, if you press the fundus up you must produce an additional flexion or angle of the organ and add to the bulk you want to press up through the cervix. In the reduction of the organ there were two movements of the hand—one was to squeeze the uterus and reduce its bulk—that alone would not be sufficient, but it contributed to the result aimed at—and the other movement was to press the whole organ upwards slowly. Dr. Kidd placed the patient on her back. He (Dr. M'Clintock) would prefer placing the patient on the left side and using the left hand. He thought it was of great importance in all operations requiring the hand to adhere to the rule laid down by Mr. Robertson of Manchester.

At the same time he was satisfied that cases would arise where all manipulations would entirely fail to replace the organ. He had one such case himself some years ago in the Rotunda Hospital, which he treated for a length of time, and in which he made three attempts at re-position, the patient being under the influence of chloroform, but he completely failed to reduce the uterus, though it seemed at the first blush to be a good case for reduction by the hand, for the bulk of the uterus did not exceed that of a walnut. He persisted in the attempt to press up the uterus till the woman got so faint and collapsed (partly perhaps from the chloroform), that he became alarmed and thought it better to desist. He subsequently amputated the uterus, and the woman recovered. Even after its removal from the body, the uterus could not be re-inverted by any amount of force short of lacerating it.

DR. J. A. BYRNE remembered the case referred to by Dr. M'Clintock, and it was very similar to the one related by Dr. Kidd. The uterus was

small, and presented all the symptoms he had described. He thought, however, that in the manipulation they did not use the same means as Dr. Kidd. The latter compressed the organ before pushing it up, but he thought Dr. McClinton had devised a cup-shaped instrument, for the purpose of pressing up the fundus.

DR. MCCLINTOCK.—Dr. Byrne is quite right in saying that in the case referred to there was a cup-shaped instrument used as an aid to the hand, but on three several occasions the taxis was perseveringly, but unavailingly tried, and on each occasion careful compression of the organ was made.

DR. BYRNE proceeded to say that Dr. Tyler Smith had reduced an inverted uterus after fourteen years, and in doing so he used an air pessary, which he strongly recommended; but he (Dr. B.) should say that the use of the air pessary was not consistent with the method advocated by Dr. Kidd. One point of interest in these cases was the fact that peritonitis did not occur after this operation. He could not readily understand why peritonitis did not take place, except by adhesion between the opposed surfaces of the peritoneum. The two cases described appeared to have been brought about by the ineffectual efforts of the accoucheur to deliver the women. This led him to refer to the principle laid down by Dr. Churchill as to the exclusion of the placenta after delivery. It struck him that it was a line of practice that ought to be followed with caution: that the using such *vis à tergo* to exclude the placenta might be attended with bad consequences. In most of the cases in which inversion of the uterus occurred, he attributed it to rough practice, to an attempt to effect the extrusion of the placenta by pressure. He thought the real history of these cases would be that prolapse of the fundus had taken place, and a paralysed condition of the fibres of the uterus prevented the return of the organ. He could scarcely think that any amount of pressure by the hand could cause this condition of affairs unless there was some predisposition of the fibres themselves.

DR. CHURCHILL did not think that any one had laid down that pressure on the uterus was a cause of inversion, but they had laid down, he thought rashly, that pulling the cord was a cause of it. It was quite clear that if you have a fixed portion inside a loose bag, with a string to it, and you pull hard you will invert it. The explanation was so very simple that it was assumed to be the true one. Some years ago Dr. Radford of Manchester published a number of cases of inversion, all of which occurred under the care of skilful men, who were themselves standing by, and saw it occur, without touching the patient. The explanation he gave was—that there was a kind of paralysis of

the circular fibres, and an irregular action of the fibres going to the fundus.

DR. MORE MADDEN said that some years ago he published a case of inversion of the uterus, in which, according to the statement of the midwife, there was no traction on the cord. She stated she was pressing on the fundus, and the uterus shot out. There was reason, however, to doubt the truth of her statement, and he believed she had made undue traction on the cord. In that case, as soon as he returned the uterus, when it was about half way pressed through, it sprang back like a ball beneath his hand.

The PRESIDENT said that in dealing with this question of inversion they could not classify the cases merely as acute and chronic. He thought there was an intermediate stage, in which it was just possible to reduce by compression the uterus into its place, but when that stage was passed the thing became impossible. He looked upon it, that up to four or five months after the accident the case was not a chronic one, and that facilities still existed for reducing it which did not exist at a later period. That the pulling of the cord may be productive of inversion there could be no doubt. He had seen more than one case occur from the pulling of the cord. He remembered one case where the cord was broken off, and the placenta had come down with the fundus, and a portion of the cord was still attached to it. The midwife admitted that she had pulled the cord, and the proof was there, the cord which had been torn off. He was not aware of reduction having been effected after fifteen years. He thought these were very rare cases. He thought the condition of the tissues would so alter in the course of ten or fifteen years that it would be totally impossible to effect reduction at the end of that time. He could lay his hand at that moment on more than one case of inversion of the uterus where the constitution had become used to it, and where a period of life had arrived when it ceased to be any inconvenience to the individual. He had in his room within the last six weeks a patient whom he first saw some twenty-six years ago. She came to him with inversion of the uterus. She was exceedingly bloodless and anæmic. It was before the days of chloroform. He made repeated efforts by pressure upwards and backwards, and by squeezing, to reduce the uterus, but failed. He did not like to subject her to removal of the organ, and he attempted gradual pressure on the uterus by ligature, but peritonitis set in, and he was obliged to give it up. She was now a fine healthy woman, sixty years of age, and had no trace of disease about her. She had become reconciled to it, and the uterus had to a great extent become absorbed.

DR. KIDD said that as he had recorded a successful case he thought it

right that he should record an unsuccessful one. A great many years ago he had a case under his care in the Coombe Hospital, of some six or seven months standing, in which he attempted to reduce the tumour. In that case he tried it by pressing up the fundus, and made no impression upon it. There was a portion of the lip round the neck of the tumour, and after failing with other methods he seized that at each side with a vulsellum, and proceeded to press up the tumour, having that point of resistance. However he failed. He tried Dr. Tyler Smith's method of air pessaries in the vagina, and retained them there for some time, also without any successful result. The patient was tired out, and left the hospital. With regard to using the position on the back, to which Dr. M'Clintock alluded, he chose it in deference to the suggestion of Dr. Marion Sims, who, in his work on Uterine Surgery, gives a diagram, showing how reduction may be assisted by placing the left hand on the surface of the abdomen, and making pressure on the cup formed by the inverted uterus; but Dr. Kidd was not quite sure whether the plan was as easy in practice as it looked in the drawing. He did not, however, require to try it, as the uterus went back in so short a time that it was not necessary. The whole operation did not occupy more than from five to ten minutes. As to pregnancy occurring after inversion, he had heard nothing of that patient since, but at a meeting of that Society many years ago the late Dr. Montgomery narrated a case of acute inversion of the uterus, which he reduced within two or three hours after inversion occurred, and he (Dr. Kidd) had since attended that lady in three or four confinements.

DR. M'CLINTOCK said there was a case of inversion in which Dr. Johnston effected the reduction of the womb during Dr. Shekleton's mastership of the Rotunda Hospital. The patient recovered and subsequently conceived. She came in with symptoms of miscarriage, at an early period of his (Dr. M'Clintock's) mastership. The interval between the reduction of the uterus and conception was about three years. There was another case bearing on the point which had come under his observation in private practice a few years ago, where about the fourteenth day after delivery the uterus, which had become completely inverted, was reduced. That lady was confined, not many weeks ago, and had a safe lying-in, without any recurrence of the displacement.

DR. JOHNSTON observed that in the case he had mentioned he reduced the inversion with the patient lying on her side in the regular obstetric position.

The Society adjourned.

## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

*Chronic Inflammation of the Spinal Chord and its Membranes ; Disease of the Spleen.*—DR. STOKES detailed the following case and exhibited the recent specimens :—

The patient, aged fifty, was admitted to the Meath Hospital, Dec. 11, 1872. She was a washerwoman, and had worked very hard, being exposed to frequent and sudden changes of temperature. She had had indifferent health for about twelve months. About this time last year she became subject to pains in "all her bones," but particularly in those of the spine. About six months ago her bladder became troublesome—she passed little water, and that at unnaturally long intervals, though she had frequent desire to do so ; and micturition, at its commencement, caused a stinging sensation in the urethra. These inconveniencies increased ; and six weeks ago the pains became more severe and less intermittent. From that time the bladder irritation became more annoying, and, finally, three weeks ago, her head was suddenly drawn back, and she became utterly unable to work.

She had not been exposed to contagion, nor could she attribute her illness to anything but "cold and hard work."

On admission, the following was her state:—Her head was forcibly retracted, it being impossible for herself or anyone else to draw it forward. She cried out with pain, which she said "ran through all her bones"—it was in her legs, arms, back, and head. This pain was of a "shooting" character. There was extreme tenderness all along the spine—she could not bear to be touched. Her arms and legs also, were sore to the touch. There was a constant tremor in the arms and upper part of the trunk. The muscles of the arms were unnaturally tense and resisting. She constantly grasped the bed clothes, or anything she could get hold of, with great firmness. There was a remarkable curvature of the spine forward in the lumbar region ; but there was nothing else about the part which would strike one. She complained of being "dead cold." She lay either on her mouth and nose, or half on her face and half on her side—she could not attempt to lie on her back. She could not move from one posture to another in bed. The skin was very cold. The pulse 100, and so weak that it could only be counted at the heart. The heart's sounds were both present, though weak and distant. Her bowels had not been moved for nearly a week. She had, just before coming in, evacuated her bladder for the first time for two days. The tongue was covered with a yellowish-white fur. She was heavy, dull, and stupid. The pupils were normal and answered to the

stimulus of light, but there was a wild expression about the eye. The respiration was 36, and accompanied by a sort of moan or groan. The temperature was  $98^{\circ}6$ . She had a bad appetite and some difficulty in swallowing. In the evening she was in the same state. Pulse 120, respiration 28, temperature  $99^{\circ}$ .

On the twelfth, she had slept a good deal. Complained greatly of the pains. Pulse 120, and a little stronger. Respiration 40, and quieter. Temperature  $92^{\circ}2$ .

About one o'clock, while she was being moved in bed, her whole muscular system was suddenly thrown into violent spasms. She shrieked with pain; her respiration was very noisy, being accompanied by loud mucous râles, and every third or fourth respiratory movement brought up from her stomach, matter of a port wine colour. She was extremely cold, and her urine was pouring from her; she was unable to swallow anything.

In the evening she was lying half on her face and half on her right side, unable to move and incapable of being moved. Pulse imperceptible. Respiration 54, and accompanied by loud mucous râles, with a sort of hiccup about every twenty seconds. Temperature,  $98^{\circ}2$ . She was unable to speak or to swallow. Her pupils were slightly dilated. The extremities were cold and death-like. She died two hours afterwards.

Dr. Stokes observed that the case presented some of the symptoms of cerebro-spinal arachnitis, but there was no fever or history of fever. The disease began with local rather than essential symptoms, having commenced with disturbance of the functions of the bladder, and pains in the bones, the symptoms more especially referable to the spinal marrow having followed after a considerable interval. She never had any delirium. As far as relates to symptoms, the case somewhat resembled those of cerebro-spinal arachnitis, but as regarded its history was altogether different.

*Post-mortem examination.*—There was nothing remarkable found in the brain, with the exception of a considerable amount of vascularity and congestion.

When the vertebral canal was laid open, throughout its whole extent, in the usual manner, the cervical portion of its contents presented no abnormal appearance, but throughout the dorsal region, the chord had a very tumid aspect, owing to the distension of its sheath, by a copious effusion of purulent matter and lymph. In taking out the chord, more than two ounces of pus were evacuated; the substance of the chord was much softened, as was also the cauda equina.

In the abdomen, the only morbid conditions noticed were connected with the spleen. It was remarkably hard; so much so, in fact, as to give to the touch the feeling of a scirrhus tumour; its surface, also, was nodulated. On making a section, however, the organ was found to



contain hydatid cysts, the parietes of the largest of which had undergone complete calcareous transformation. The contents consisted of a thick putty-like material, which had probably been originally of a fluid or semifluid nature, but had subsequently undergone a strumous degeneration. Professor R. W. Smith, who had examined the specimens, was disposed to adopt this view, and if it were correct, it would point to the strumous origin of the morbid appearances observed in the spinal chord and its membranes.—*January 18, 1873.*

*Carnification of the Liver—Peritonitis.*—DR. EAMES said the specimen which he now exhibited was taken from the body of a man who died in Mercer's Hospital on the previous morning (Friday), having been admitted on Tuesday evening in a dying state from bronchitis. He had been twice previously in the hospital. When admitted before he was slightly jaundiced, the areolæ round the eyes of a dark brownish colour; the conjunctivæ yellowish. His breathing was rapid from pressure upwards of the abdomen, for there was an enormous amount of ascites, and the veins over the abdomen were largely distended. He was a man of most intemperate habits. He vomited blood and had piles. He suffered occasionally from constipation, and at other times had diarrhœa. He had slight pains occasionally over the abdomen, and sometimes severe pain in the region of the liver. That was about ten months since, and the man left, greatly relieved, after being in the hospital a month. In six months he returned with the abdomen again distended with fluid, which disappeared under the use of diuretics, purgatives, and the hot-air bath. He was discharged, and was brought back again on Tuesday evening last, in a dying state from bronchitis. After death three basins full of fluid were drawn off from the abdomen. The liver was then found to be covered with lymph; there was also a considerable amount of lymph effused over the intestines, which were glued together by old adhesions. The liver was not cirrhotic, as he had believed, but was in a state of carnification. The gall bladder was distended, and underneath the liver was found a large-sized cyst, which contained a brown fluid slightly stained with bile. The right kidney contained two small cysts; the left presented no abnormal appearance. The spleen was small and hard. The diagnosis was cirrhosis of the liver, which, considering the history of the case, was perhaps excusable. The man was in the habit of taking raw whiskey in the mornings before food, under which circumstances the alcohol is quickly absorbed and excites congestion of the liver. Again, the ascites was very considerable, and the man had hæmatemesis, piles, constipation, alternating with diarrhœa; enlarged veins on the abdomen, especially on the right side; an icteroid tinge of the skin, with diminished hepatic dulness. The case was a good example of the uncertainty which often attends the diagnosis of those forms of hepatic disease which result in

diminishing the size of the gland and which, at the same time, are accompanied with obstructions of the vena portæ.—*January 25, 1873.*

*Cysts in the Cavity of the Right Pleura.*—DR. PURSER said the specimens he exhibited were taken from the body of a woman, who died two days ago in the City of Dublin Hospital. She was aged thirty-five, and unmarried. She first came under his notice in the early part of last summer, when she was admitted into the hospital suffering apparently from Bright's disease. She was exceedingly anasarcaous, and her urine was loaded with albumen. The only thing calling for notice while she was in hospital was, that the dropsy disappeared from the left side of the body, while it persisted in the right side. This condition, which could not be accounted for mechanically, remained for a few days, when she insisted on going out of the house. She came back about two months ago without dropsy, but still passing albumen in her urine. She was manifestly dying; could keep nothing on her stomach; her tongue was dry and glazed; and she sank from day to day, and during the last fortnight was kept alive by nutritive enemata.

On opening the chest the right pleura was found nearly full of a rather bright, greenish-coloured fluid, perfectly limpid and transparent, and in it were floating an almost infinite number of cysts. They were quite free, and their walls were exceedingly thin, so that if an attempt were made to lift them up, they broke under the finger. They were perfectly transparent, and appeared to be not very tensely filled with fluid, for as they floated in a shallow vessel they tended to flatten themselves out and to become spheroids rather than spheres. They were examined with the microscope. The walls of the cysts were homogenous, or very faintly striated, and on their inner surface there were small shining granules, some of which were calcareous and dissolved in acids with effervescence, whereas others were fatty and did not dissolve. The latter were grouped together in masses, that seems as if they were the remains of cells that had undergone fatty degeneration. He had looked very carefully into the fluid for hooklets, which might be diagnostic of echinococci, but had found none. The right pleural cavity showed no traces whatever of inflammation; there was no lymph effused on the surface of either the visceral or parietal layers of the pleura, and no vascularity. The lung was compressed on this side, but the air was not completely expelled from any part of it. During the last four or five days of life the woman had been lying on her right side. The other lung was healthy. The heart also was healthy, and contained, the right heart particularly, decolorized clots.

On opening the abdomen the peritoneum appeared healthy—there was no fluid in it. The liver was very much altered in shape and deformed by deep cicatricial fissures that passed through it in all directions. They were best marked on the superior surface of the

organ, and there were dense bands of adhesion connecting many of them to the under surface of the diaphragm, and on the left side uniting the liver and spleen, which also was adherent to the diaphragm. Besides these cicatrices in the liver, there were in several places round nodules of a yellowish-white colour, in some places appearing on the surface of the liver, and lying in healthy hepatic tissue, and covered with healthy peritoneum, but in other places these nodules occurred in the cicatrices. They were of a yellowish-white colour, very sharply marked off from the tissues in which they lay. Under the microscope they presented nothing very characteristic, only the appearance that any tissue presents when it has undergone the cheesy transformation—a number of small shrivelled cells, a number of fat globules and indistinct fibres. The gall bladder was full, but there was no obstruction in the gall ducts. The spleen was adherent to the diaphragm and rather firm, but presented no other abnormal appearance. The kidneys were rather larger, heavier, and firmer, than natural. They had the feel of India rubber. The capsules peeled off them with a certain amount of readiness, but not so freely as in the healthy kidney, and it left the surface smooth and with a mottled appearance. Section showed a condition, the result of degeneration of the renal epithelium, together with amyloid degeneration of the blood vessels. The supra renal capsules were healthy. The stomach presented on the surface a few hæmorrhagic spots, where extravasation of blood had taken place, and around these there was slight inflammation of the mucous membrane.

The pyloric orifice was slightly constricted by thickening of its sphincter, but the little finger passed freely through it, and the constriction was not sufficient to account for the vomiting, which he could only attribute to the albuminuria. The uterus was small, and apparently a virgin uterus. There were no signs of syphilis in the bones, in the skin, or about the genital organs, and the opening of the vagina was closed by a hymen. So that from all these circumstances it was difficult to believe that this disease of the liver had a syphilitic origin, and yet it was difficult to know what it was if it were not syphilitic.

The points in this case most deserving of notice were : First, the extraordinary disappearance of the dropsy from one side of the woman's body in the summer. This was inexplicable, unless some influence of the nervous system on the production of dropsy were assumed. Second, that the condition of the liver was exceedingly like that produced by syphilitic disease, and yet from the history of the case it was in the highest degree improbable that any syphilis existed; and the third point was the peculiar bodies which were found in the right pleura. What their nature was he could not say. If they were echinococci, the hooklets ought to have been found. Echinococci, moreover, do not occur free in cavities like that of the pleura, and marks of inflammation

are usually observed about them. There was no evidence of perforation of the diaphragm having occurred at any time.—*January 25, 1873.*

*Pneumonia.*—DR. HAYDEN exhibited a specimen of multiple cirrhosis of the lungs resulting from chronic interstitial pneumonia, together with circumscribed and exaggerated vesicular emphysema, compensatory of the former. A man aged forty-three years, who had been in the army over twenty years, and had spent nine years in India, and whilst there had fever and ague, was admitted to the Mater Misericordiæ Hospital on the 27th of December. He was then suffering from difficulty of breathing, amounting to orthopnoea. He was cyanosed, and the lower extremities were cedematous. The pulse was rapid and weak. The physical examination of the chest was sufficient to show that emphysema of the lungs and chronic bronchitis of an aggravated form existed. The action of the heart was regular, and on inducing the man to suspend breathing for an instant the sounds were distinctly audible at the base of the ensiform cartilage, and unassociated with murmur. His condition varied much from day to day. It became necessary ultimately to puncture the legs, for the purpose of evacuating the serum which had accumulated, in order to prevent gangrene arising from the distension of the integument. This was followed by temporary relief. The urine was normal, and was passed in small quantities. The man died on the 19th December. Before he proceeded to point out the appearances presented by the lungs he should make one remark in reference to diagnosis. In addition to the ordinary signs of emphysema of the lungs, an auscultatory phenomenon existed here, which induced him to diagnose exaggerated vesicular emphysema of the lungs, and this diagnosis was borne out by the *post-mortem* examination. The phenomenon was this—in certain situations, especially in the lower and back portion of the left side, and in the subclavicular regions of both sides, was audible a sound which it was difficult to describe, but which, for want of a more expressive term, he would designate an *amphoric sibilus*. It was of a metallic character, audible during inspiration and expiration, and suggested the passage of a current of air from a minute bronchial tube into a large air chamber, with membranous walls. It had none of the characters of the “dry crepitating râle with large bubbles,” or of the *frottement* mentioned by Laennec as signs of interlobular and subpleural emphysema. Judging from this sign, he felt himself warranted in diagnosing localized, exaggerated vesicular emphysema, for on a former occasion a similar phenomenon had enabled him to diagnose a similar condition of the lung, and he had the honour about two years ago of laying the particulars of that case before the Society, and exhibiting the morbid specimen which confirmed his diagnosis. But in the present case there was a condition of the lung that he did not diagnose, that is to say, in certain portions of

the lung there were distinct evidences of antecedent chronic interstitial pneumonia.

The lungs were extensively adherent to the chest walls. The pulmonary pleura on the right side was greatly thickened, and from its deep surface, trabecular bands passed into the substance of the lung near its centre, and on the outer surface, rendering this portion of the organ, to the extent of about three square inches, solid, and devoid of air. In the centre of the hardened portion of lung there were a few caseous nodules of the size of a hazel-nut. Examined under the microscope, the solid portion of the lung exhibited a greatly hypertrophied condition of the connective tissue, the air cells were obliterated in many places, and where not so, they were filled with the *débris* of epithelium. The base of the left lung was in a state of pneumonic consolidation, and broke up readily. At the apex of both lungs the air cells were inflated into a bladder-like projection as large as an orange, and on the right side this overlay the depressed and cirrlosed portion in some degree. The upper part of the inferior lobe of the left lung was similarly inflated. These magnified bullæ were fixed in their respective situations, and consisted of dilated air sacs, with probably the intervening septa partially destroyed. The lungs were of remarkably large volume, owing to the condition of emphysema, notwithstanding the existence of distinct centres of chronic interstitial pneumonia. The trachea was somewhat dilated and remarkably vascular. The heart was hypertrophied, and partially dilated: it weighed eighteen ounces, but its tissue was perfectly sound; the right ventricle was considerably thickened and much dilated, and the left was thickened, but only in a very slight degree dilated. The points in this case deserving of notice were these—1st, the existence of distinct centres of chronic interstitial pneumonia, with exaggeration of the interstitial structure of the lung, and without diminution of volume, or rather, with an increase of volume; 2nd, the existence of circumscribed, exaggerated vesicular emphysema of the lung, which was diagnosed on the evidence afforded by the single sign mentioned, namely, a sibilant sound, with a metallic ring.—*January 25, 1873.*

*Fatty Degeneration of the Heart.*—DR. HAYDEN said, a man aged forty-five, a gardener, of temperate habits, who had been two years previously in hospital, under his care, for bronchitis and slight pleuritic irritation of the right side, was admitted again to hospital on the 13th of this month. He was again suffering from bronchitis. There was evidence of pulmonary emphysema. The pulse was regular, but weak, and the heart acted correspondingly. In the interim between his first residence in hospital and his second admission, his history was as follows:—He had been subject to fainting fits, and on one occasion actually fell down in the street; this fit lasted about four or five minutes, during which time

he was unconscious. While in hospital he had two or three of these attacks, even while in bed. His sight would fail, he would feel his head giddy, and generally as if about to die. In two or three minutes this feeling passed away. There were physical signs of enlargement of the heart. There was scarcely any impulse. As to the sounds, there was nothing special, with one exception, that at the lower part of the sternum, when the bronchial râles were suspended for a time by requesting the man to stop breathing, a loud systolic murmur was audible, and was traceable upwards, in the course of the ascending portion of the arch of the aorta, for a certain distance, but *not* into the carotids. The diagnosis was enlargement of the heart, with fatty degeneration, dilatation and roughening of the first portion of the aorta.

On the 27th of the present month the man died in one of these fainting fits previously described. He had just been out of bed, was put back by some of the patients, and in four or five minutes he was dead. On making a *post-mortem* examination the lungs were found to be in a very advanced state of emphysematous inflation, and also showed evidence of repeated bronchial attacks; they were large and voluminous. The right lung exhibited signs of the former pleuritic attack, the lobes being united by fine false membrae. The heart was soft and enlarged, weighing eighteen ounces. The right ventricle was considerably dilated; the left ventricle dilated and hypertrophied. The aorta was exceedingly dilated, so that he could pass his four fingers and thumb through it. The orifice was also dilated, but owing to a proportionate expansion of the valves, which were opaque, but competent, there was no aortic regurgitation, and no obstruction at the orifice, so that the murmur of efflux, heard throughout the ascending portion of the arch, was not due to valvular obstruction, but to disease in the aorta itself. The entire of this portion was rough, and in a few places it was also fissured on its internal surface, and immediately above the valves a flake of fibrin the size of a six-penny piece was firmly attached to the wall of the vessel over one of the fissures. He thought the differential diagnosis between disease of the aortic valves and of the first portion of the vessel itself might be made. The elements in the diagnosis were, that when the murmur originates at the aortic orifice it is audible in the great arteries of the neck, but when the aortic valves are sound, the murmur being due to roughening of the first portion of the aorta, it is never heard in the carotids, only extending two or three inches up the vessel. Death in this case was from syncope, due to a weak heart, with enormous dilatation of the aorta. The tissue of the heart was found to be in that condition of fatty degeneration in which the fatty particles were grouped round the nuclei of the muscular fibres.—*February 1, 1873.*

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*Ulcer of the Œsophagus.*—DR. HAWTREY BENSON exhibited a specimen



of perforating idiopathic ulcer of the œsophagus, which he had removed from the body of a woman who died in the City of Dublin Hospital. She was aged fifty, but had all the appearance of a woman of seventy-five or eighty. She was extremely emaciated, and had much of that peculiar appearance which would lead one to say she was the victim of cancer. The glands in the neck, groins, and axillæ were considerably hypertrophied, and those of the mesentery could also be perceived, so great was her emaciation, to be enlarged. She complained of a slight "soreness," as she expressed it, referred to the centre of the sternum, but by far the most prominent symptom was extreme dysphagia. She was unable to swallow the slightest particle of food or drink, for regurgitation invariably followed any attempt at deglutition. From these facts, of the appearance, the dysphagia, and the enlargement of the glands, he was led to think that he should eventually find cancerous disease involving the œsophagus, and obstructing the passage of food. Owing to the extreme dysphagia he, therefore, administered nutriment by the rectum, and this he continued for about three weeks, when, to his astonishment, she began to recover rapidly the power of swallowing. He then modified somewhat the terms of his diagnosis, and thought there was a tumour which pressed on the œsophagus, causing obstruction, and which, for some reason unknown, had then altered its position, and allowed the free passage of the food. She improved for a few days, but the improvement did not continue. An uncontrollable diarrhœa came on, which emaciated her more than ever, and under which she gradually sank. In making the *post-mortem* examination he first opened the abdomen, and found everything normal there. Upon opening the chest, he proceeded to look for the cause of the dysphagia. In doing so he raised the left lung gently, and immediately perceived what proved to be the contents of the stomach discharging themselves through an oval opening in the œsophagus, about five inches from its extremity. This opening was caused by an ulcer, which, commencing on the mucous surface of the œsophagus, had perforated all the coats of that organ, even the layer of pleura covering it, and had commenced to attack the opposed pulmonary pleura. This was shown by the presence of a circumscribed patch of vascularity on that membrane, corresponding in size, shape, and position to the ulcer. A thin layer of lymph, causing temporary adhesion, must have prevented extravasation during deglutition, but was torn through when the lung was raised out of its position. On slitting up the œsophagus a patch of ragged ulceration of the mucous membrane was found, about the size of the palm of one's hand, distributed around the central perforating portion. This latter was about the size of a shilling, and had a rounded, thickened margin. Dr. Hawtrey Benson thought that in the state of the parts he had a reasonable explanation of the apparently anomalous symptoms of very extreme dysphagia, followed by

comparative ease in deglutition, for while the disease was more recent, and the inflammation acute, a reflex spasm of the œsophagus doubtless took place on the introduction of food, which ceased to occur when deep destruction of the tissues was the result, and the inflammation became less active.—*February 1, 1873.*

*Fracture of the Cranium.*—MR. EDWARD HAMILTON exhibited an example of fracture of the cranium, which, he observed, presented a certain amount of pathological interest, from the great disproportion that existed between the symptoms presented and the amount of injury met with after death. A boy, eleven years of age, in endeavouring to open a double gate for a horse and dray to pass through, having opened one side of the gate, was proceeding to open the other, when the first part of the gate suddenly slapped upon him and compressed his head between it and the other leaf. He immediately fell down insensible, and was conveyed to Stevens' Hospital. He (Mr. Hamilton) happened to be there, and saw the boy immediately after admission. He lay in a state of collapse, having a cold clammy skin, and a pulse about 58. He presented a very extensive, contused, and lacerated wound over the right temple. There was distinct evidence of a depressed fracture of the skull, and on putting a finger into the wound a small portion of the bone could be found apparently detached. As he suffered a good deal of collapse, and as they felt the bone depressed, and had it exposed, in an open wound, it was considered desirable to dilate the wound and raise up the bone that was depressed. The patient showed distinct evidence of feeling pain. He distinctly appreciated the pain produced by my attempt to explore the wound, and by the operative proceedings which were considered necessary. The portion of bone depressed was lifted, and appeared to remain pretty well in its place. The most striking feature in this case was that with the undoubted depression which existed, they had not the symptoms attributed to compression of the brain, and that there was compression there could be no doubt. They had no dilated pupil, no stertor, no whiffy breathing, no paralysis, no convulsions, and it was the mere fact of being able to feel the depression itself that had induced them to adopt means to raise the bone. The boy was placed in bed, and for some time there was considerable difficulty in swallowing, but after a little time he was able to take stimulants moderately. He continued in this state during the evening, but towards morning he seemed to recover a certain amount of consciousness, and expressed a desire to pass water, and appeared apprehensive of wetting the bed. He (Mr. Hamilton) saw him the day afterwards, and found he had rallied to a certain extent. The pulse had risen, there was perfect power of swallowing, and he manifested distinct consciousness of the impression of pain. He occasionally spoke, but it was not easy to rouse him or to make

him speak intelligibly. He continued in this state until the night of the Thursday following, when he became restless and uneasy, and it was difficult to keep him in bed; his pulse ran up to 140 and 150, and he died at eight o'clock in the morning.

On a *post-mortem* examination, a considerable depression was found of a large portion of the cranium, a portion of the frontal, the temporal, and the parietal bones was forced down below the level, lacerating the dura mater, and inflicting considerable injury on the brain. When they were examining the wound during life, a substance exuded from it which was clearly brain substance. This, of course, led them to form a very unfavourable prognosis of the case. A very severe injury had been done to the right hemisphere of the brain, and a considerable portion was lacerated and injured by the depression of the bone. As a mere fracture of the skull, this specimen was not of much pathological interest, but it was of immense importance as showing that there might be very serious mischief done to the brain, and yet those symptoms laid down in books, as destructive and characteristic of that injury, might not be apparent.—*February 1, 1873.*

*Acute Pneumonia; Cirrhosis of the Lung.*—DR. NIXON exhibited the heart and lungs which were taken from the body of a woman aged thirty, admitted under his care into the Mater Misericordiæ Hospital, on the 23rd of January last. The history of her illness, obtained by the resident pupil from herself, was briefly as follows:—A week before admission she got a severe wetting, followed by a shivering fit and great prostration. She was treated for bronchitis, but experiencing no relief, presented herself at hospital. She was the mother of seven children, and had always enjoyed good health up to the time of her present attack; had never suffered from cough, and never spat blood. When he saw her on the morning of the 23rd, she was in a dying state; the extremities were cold; she was almost pulseless; the radial beats were so flickering and irregular he could not count them; the face was sweating and extremely pallid; the respirations were rapid but very feeble; there was an intolerable stench from the breath. On a hurried examination (the state of the patient precluded a long one), he found evidences of pneumonia in the right lung, both in front and behind. Posteriorly, corresponding to the base of the left lung, marked dulness existed on percussion; and on stethoscopic examination, a loud coarse mucous râle could be heard—it accompanied both inspiration and expiration. There was no expectoration at the time he saw the patient. The heart was examined previous to admission, but its sounds were entirely masked by the respiratory murmurs. Taking into consideration the history of the case, the rapid prostration, the physical signs which existed, especially those detected at base of left lung, coupled with the intolerable fetor of the breath, he

was led to believe that the case was one of double pneumonia, and that the inflammatory action had run into gangrene. The woman died about twelve hours after examination.

The *post-mortem* appearances were as follows:—The lungs might be said to be non-adherent; there was slight adhesion of the lower lobe of the left to the costal pleura. The bronchial tubes presented evidences of recent inflammation. The upper lobe of the right lung was in the third stage of pneumonia; its texture was in parts soft and almost diffuent. The lower lobe of the left lung presented a remarkably small and atrophic aspect. The pleura and subpleural tissue covering it were much thickened and evidently the seat of fibrous deposition. In a section made through the centre of the lobe, a distinctly dilated bronchial tube was visible. A portion of the lobe, which he injected with white wax, gave exactly the appearance of an advanced case of cirrhotic liver. It was in that condition originally described by Sir Dominic Corrigan as “cirrhosis of the lung.” There were no tubercles in either lung. In the heart he found both right and left chambers dilated. The walls of the left auricle were hypertrophied; those of the left ventricle somewhat thinner at the base than the normal size. The edges of both flaps of the mitral valve were thickened and adherent to each other at their margins, producing mitral stenosis and incompetency. There were patches of atheroma visible at the origin of the aorta. On the surface of the heart there was a large deposition of fat. Microscopic examination of its muscular fibres showed plainly the transverse striæ, but traversing the fibres in various parts, were seen longitudinal beads of minute granules. The condition observed was similar to that produced in what is known as “brown atrophy of the heart.” The points which induced him to bring the specimens before the Society were—Firstly, the existence of such advanced chronic disease without the manifestation of any distressing symptoms during life prior to last illness. Secondly, the probable connexion between the diseased state of the heart and the sclerosis of the lung; the mechanical impediment to the circulation leading to congestion, exudation, and proliferation of tissue. Thirdly, the absence of tubercle as a local cause of the diseased condition found in the left lung. And fourthly, the existence of the intolerable fetor which, with the physical signs, had led him to believe the inflammatory process had terminated in gangrene. The fetor must have depended on the retention in the dilated bronchi, of the secretion of the inflamed mucous membrane which underwent decomposition.—*February 1, 1873.*

*Bright's Disease.*—DR. QUINLAN said the specimens he exhibited were taken from the body of a man who died in St. Vincent's Hospital on the previous day. He was admitted on the 20th December, and did not make any complaint referable to the kidneys. He described himself as

suffering from dyspeptic symptoms. He was a hard drinker, and his impression was that it would be found he was suffering from some disease of the liver, probably cirrhosis. His urine was measured and examined, and it was found that it was somewhat deficient in quantity, and showed a deposit of casts of tubes, characteristic of the disease of which he died; also a quantity of albumen. The symptoms increased steadily, but gradually, pain in the back supervened, the urine became less and less in quantity, the amount of albumen increased, and the quantity of casts deposited in it became larger. The man began to swell at his feet, and the usual symptoms followed. It was evidently a rapidly progressing case of that form of Bright's disease of which he died. On last Tuesday he began to feel heavy and dull; this condition increased, and on Thursday night symptoms of violent uræmic poisoning set in, and he expired at seven o'clock on Friday morning. There were no convulsions, nor was there any vomiting at the time of his death. The prominent symptoms in the case were the small quantity of urine, and the great swelling in every part of the body, except the neck and face. They found on *post-mortem* examination that the liver was not perfectly sound, but it presented no morbid condition sufficient to cause death. The kidneys were of normal size, and presented the appearance of Bright's disease. The waxy degeneration could be seen all over them, except at the lower extremity, and there the inflammatory process was going on, and it was this portion of the kidney becoming unable to act that immediately caused the man's death.—*February 8, 1873.*

*Cancer of the Ovaries.*—DR. HAYDEN presented an example of cancerous disease of the ovaries. The woman who was the subject of it was aged fifty-three, had been married a few years, but had never had a family. Six months previously to her admission to hospital, which took place on the 26th of January last, she said she noticed for the first time a swelling in the lower part of the abdomen, in a position corresponding to the right iliac fossa. This was painful from the first; it grew rapidly, and six months afterwards, when he saw her for the first time, the abdomen had attained to the dimensions which it exhibits at the full period of pregnancy. The woman was weak in an extreme degree—so much so that death was obviously impending. She had scarcely any pulse, her face and neck were congested, and she complained incessantly of pain in the abdomen. By means of an opiate he succeeded in obtaining a short sleep for her in the course of that night, and on the following evening she died of asthenia. Certain circumstances in this case induced him to diagnose malignant disease. In the first place, the rapidity of growth, extending over a period of only six months; secondly, the occurrence of pain and continuance of it from the first appearance of the tumour until the termination of life.

The tumour itself, examined before death, was irregular in outline. The lower part of it was nearly solid, but yielded to the hand the feeling rather of an elastic than of a solid body. In the upper part fluctuating cysts were distinctly to be felt. They would observe that the tumour was connected with both ovaries, but especially the right. The uterus was of the ordinary size of the organ in a woman who had never borne children. The Fallopian tubes, with their fimbriated extremities, were distinctly traceable on both sides, and connected with the right ovary was the large tumour which he exhibited, fully equal to the distended stomach of a sheep. The mass itself was formed of a number of distinct cysts. One which he had opened contained at least a quart of colloid matter, presenting the appearance of thick honey, and there were some others which he would now open. Dr. Hayden opened some of the cysts, and the matter they contained was what he had described. The tumour attached to the left ovary was much smaller than that on the right side, but otherwise similar to it. There were serous cysts here and there, which were those that were felt during life. In the mesentery in various situations, and engaging the mesenteric glands, was found the medullary form of cancer, and the case was interesting as illustrating a combination of two forms of carcinoma in the same person. Before maceration, the affected mesenteric glands were milk white, and on being punctured a creamy fluid exuded from them, presenting the microscopic characters of the cancer juice of medullary carcinoma. In the mesentery, likewise, were several large patches of melanoid deposit, and a few upon the surface of the tumour, but none in its interior, showing that pigmentation was an accident of the original disease. Under the microscope the colloid matter presented the characteristic morphological elements of colloid, viz., an imperfectly developed fibrous stroma, small nucleated cells, escaped nuclei, and oil globules. The case was interesting diagnostically, as showing that an ovarian tumour, which from the first was associated with pain, and attained the proportions mentioned in a period of a few months, was unlikely to be benign, and it illustrated also the union of two forms of cancer, the colloid and the medullary.—*February 15, 1873.*

*Abnormal Styloid Processes.*—MR. F. T. PORTER exhibited two specimens, which, he observed, were of more interest in an anatomical than a pathological point of view. They were styloid processes, much longer than usual, and not so firm and osseous, but rather slender and flexible. They were attached to the temporal bone by cartilage, instead of bone, and in the same subject there was no styloid muscle or ligament. They were situated between the carotids, and so placed that it would have rendered ligature of either vessel extremely difficult. He showed a similar specimen which belonged to Professor Smith, but in the latter case the

process was attached to the skull by bone, and was of great thickness and strength.—*February 15, 1873.*

*Obstruction of the Orifice of the Urethra.*—DR. QUINLAN said the specimen he exhibited was, perhaps, one of the smallest that had ever been brought under the notice of the Society. A week ago a man came to him from Monaghan, recommended by a former patient, from whom he had removed a large tumour of the inferior maxilla, and stated that he was suffering from an obstruction in passing water. He admitted the man, thinking it was an ordinary case of stricture, but on attempting to pass a catheter he found the obstruction was at the external meatus. A rough sketch which he exhibited would show the appearance it presented at the time. The urethra was of ordinary breadth, two-tenths of an inch, and at the bottom of it there was a capillary opening, through which he could just succeed in passing a small probe. The man said he had never suffered from syphilis in any form, and from the examination which Dr. Quinlan had made with the microscope the specimen did not present any mark of ulceration or of a previous chancre. The obstruction consisted simply of a piece of skin passing across the external meatus, and the probe, when passed underneath this, could be swept in every direction. When the man tried to pass water the urethra swelled enormously. He (Dr. Quinlan) slit it up with a sharp bistoury, and catching the top with a forceps, he cut away a circular piece surrounding the urethra, and finished by passing a No. 12 catheter. The urethra below the obstruction was dilated. The catheter was left in twenty-four hours, and the man was going on well, and able to pass water in a full stream.—*February 15, 1873.*

*Malignant Disease of the Ovaries.*—DR. HAYES exhibited a specimen of malignant disease, which affected, he believed, in the first instance, the left ovary, and extended so as to engage the right and the posterior aspect of the uterus, and so far as he was able to make out from a vertical section of the uterus, seemed to have obliterated the uterine cavity. The woman was admitted to the Mater Misericordiæ Hospital on the 27th January. She suffered from an abdominal tumour, her size equalled that of a woman in the sixth or seventh month of pregnancy. She complained greatly of pain, and stated that she suffered a good deal from constipation, but otherwise seemed to be in fair health. She had been, she said, in good health up to three months before admission to hospital. At that time she experienced pain in the lower portion of the abdomen, in the hypogastric region, and soon noticed a swelling. This rapidly increased, and at last the suffering became almost unbearable, due, chiefly, to flatulent distension of the intestines and stomach. On making an examination he detected a very firm tumour, which might be

readily moved from side to side, and this tumour was to be noticed at the lower part of the abdomen; the upper part of the abdomen, though greatly distended, was clear on percussion, but some dullness existed in the lumbar region. The pain which the woman experienced arose from the ovarian tumour, which pressed on the intestinal canal, causing an obstruction to the passage of flatulent matter and flatus, and consequently her suffering from intestinal distension. He determined to observe for a while the progress of the disease, thinking it might be a suitable case for ovariectomy, as anteriorly the tumour seemed free from attachments. The woman's suffering increased so much, he came to the conclusion that she suffered from malignant disease. This opinion was the result partly of the rapid growth of the tumour, and partly of the aspect of the woman, which changed greatly for the worse in a short period of time, and this opinion was in some measure confirmed when the operation of tapping was performed. With a view to relieve the distress the patient suffered from he determined to try to reduce the bulk of the tumour by paracentesis, and, owing to the tense feeling of the tumour he thought an ordinary trocar would not be sufficient, and he requested Dr. Hayden to allow him the use of an improved form of aspirateur which he possessed. On the 15th of the present month (February) he punctured the tumour, and although the largest tubular needle was tried, and the cylinder thoroughly exhausted of air, yet but little of the fluid drained very slowly from the tumour, and it was of an extremely tenacious character, so after some time he withdrew the instrument, having failed to diminish the bulk of the tumour. Not more than an ounce of fluid escaped. He came then to the positive conclusion that the tumour was malignant, and on the 20th instant the patient died.

The *post-mortem* examination showed that the tumour was attached to the parietal layer of the peritoneum at either side of the abdomen, though anteriorly it was comparatively free. Within the peritoneal sac there existed two gallons of fluid. The tumour contained a substance in appearance resembling the tissue of medullary sarcoma and colloid matter; they would observe the tenacious character of the fluid, and could understand therefrom what small chance of a successful result could be hoped for from the tapping of such a cyst. There were secondary cysts connected with the walls of the parent one. Posteriorly, at the left side, a mass of medullary matter connected the tumour with the small intestines. The mesentery was to a considerable extent infiltrated with this substance, and melanotic patches existed on the mesentery and the wall of the intestinal canal. The sigmoid flexion of the colon was intimately adherent to the wall of the tumour. It was with difficulty a tube could be passed into this tortuous portion of the great intestine. This explained the fact of constipation and flatulent distension of the stomach and bowels being constant. The os uteri could not be felt during life in



this patient. The upper part of the vagina extended beyond the os, upwards, and towards the left, forming a *cul-de-sac*, into which the finger readily passed. He had laid open the uterus, and had not yet been able to satisfy himself that a cavity existed in it; it was quite adherent to the cyst wall. Dr. Hayes then made a transverse section of the uterus, and said they had evidence of a portion of the uterine cavity being still in existence; the cervix was much narrowed and extremely small. The appendages of the uterus at the left side seemed to be incorporated with the tumour, and he was not able on the right side to separate them from the diseased mass. The patient died with symptoms of exhaustion. She expressed herself as being relieved after the operation of tapping, but this must have been mere imagination, as no practical benefit accrued from it. She was at times a little delirious, but there were no peculiar symptoms during the progress of the case. He had omitted to state that she was forty years of age, and twenty years ago had a son; eight years subsequently a miscarriage. She menstruated regularly, even during her illness.—*February 22, 1873.*

*Tuberculosis.*—DR. QUINLAN said the first case he was about to bring before the Society illustrated the well-known fact, that while injuries and diseases, apparently of a trifling character, may sometimes cause death, yet, on the other hand, persons may go on discharging their daily work with an amount of disease that one would think should have rendered them incapable of any exertion.

The patient, from whose body the specimens were taken, was originally a soldier, and served in India many years. He was discharged from the army on account of ague, and came home to this country invalided at the age of thirty-eight. He then became butler to a citizen of great eminence in Dublin, and continued for several years discharging his duties with great regularity, going about and waiting at table at a large dinner party, a week before the present day. The gentleman intended to have another entertainment of the kind on last Monday, and the man, although complaining on Sunday, said he would not give up till the next day, as it might inconvenience his master. Early next morning, his master, seeing that the man was unwell, sent for his family medical attendant, and the result was his being sent, at his own request, to St. Vincent's Hospital. He was moribund from congestion of the lungs when admitted, and he died eight hours afterwards. On *post-mortem* examination, Dr. Quinlan found, in the first place, a low form of pneumonia of both lungs. Both these organs were extensively tuberculated, and in various directions throughout them, particularly at their base, there were small phthisical cavities. He examined the spleen, on account of the man having had ague, but it was not much over the normal size. The kidneys were about the ordinary size, and on making a section of them, he found evident appearances of

congestion and fatty degeneration. The man had always been temperate in his habits, and his liver, notwithstanding his many years' residence in India, was of ordinary size.—*February 22, 1873.*

*Malignant Tumour of the Tibia.*—DR. QUINLAN also exhibited a growth which he had removed a few days ago from the leg of a young man seventeen years of age, who had been sent up to him from the county of Wicklow. He suffered from necrosis of the tibia, and it had been operated on very successfully, and a large sequestrum of diseased bone removed. A fungous growth thereupon grew out of the tibia on the upper side, below the knee. It became very large, and whenever it was touched it bled very copiously, and accordingly he removed it on last Tuesday by the *écraseur*, and it came away in eight or nine minutes, the operation having been performed very slowly on account of the hæmorrhage. When the tumour came off, some slight bleeding supervened, which was stopped by the application of the tincture of muriate of iron. A microscopic examination of the tumour had convinced him that it was of a malignant character.—*February 22, 1873.*

## TRANSACTIONS OF THE CORK MEDICO-CHIRURGICAL SOCIETY.

President—DR. FINN.

Hon. Secretary—DR. HOLMES.

*Clinical Notes on some Forms of Hæmorrhage and their Treatment by New Remedies.* By E. R. TOWNSEND, Jun., M.D., T.C.D., Physician South Infirmary, and Lying-in Hospital, Cork.

CASE I.—Mrs. F. had been delicate for many years. She became pregnant for the second time, and suffered dreadfully from sickness of stomach, so much so that she had to be supported by enemata of beef-tea for several weeks. After violent straining she would spit a few mouthfuls of blood. This was generally checked by ice, but recurred again and again. She aborted about the end of the third month, with a good deal of hæmorrhage, and in a few days she was up and able to be in the next room, when she was suddenly seized with violent hæmoptysis. She was ordered infusion of roses with sulphate of magnesia every three hours until the bowels were acted on; this was rejected by vomiting, and the acetate of lead was substituted for it, but this also came up. Gallic acid was then tried, both in pill and mixture, but with no better result; and, on the evening of the third day, as she again began to spit blood very freely. I thought I would try the sub-cutaneous injection of ergotine. Accordingly I injected three grains into the skin of the right elbow. This caused a good deal of smarting, and the part became very red all round the puncture the moment the fluid was injected. Almost immediately she said "I feel better;" the bubbling in her throat ceased at once, and she spat no more blood for several days. Her arm was very sore and inflamed, the swelling reached from the shoulder to the wrist. I was afraid she would get erysipelas, but by applying cold water dressing to it the inflammation subsided in a few hours, and she was able to take nourishment, as the stomach became quite settled when she ceased to take any medicines by the mouth. She had a slight return of the hæmoptysis five days afterwards, which gradually yielded to the solution of acetate of lead. I was afraid to use the ergotine again for fear of its causing inflammation, and as she was very weak I did not like running any risks, but she herself was so convinced of its power that she begged of me to use it, and had not the bleeding soon stopped, or had the sickness of stomach returned,

I intended to do so; but as this was one of the first cases I tried it in, I was not aware that the irritation caused by the ergotine always passes off very soon, and was rather afraid of it. There was well-marked moist clicking under the left clavicle, with some dulness on percussion, clearly indicating the presence of tubercular deposit. She has had no return of hæmorrhage since this time, now nearly eight months ago.

CASE II.—The next case was a patient in the South Infirmary, named Mannix, who was admitted from Passage with hæmoptysis. He had been in India. His appearance was that of a man of intemperate habits. There was moist crepitation under left clavicle, also evident dilatation of arch of aorta; the impulse over the sternum was very strong; there was no other symptom to indicate aneurism except an occasional pain in his back. As the blood was bright red, and coming up rather freely, with bubbling in the throat, I injected four grains of ergotine over his right elbow. His bowels had been well acted on before I saw him. The injection caused slight redness and some smarting, but completely checked the expectoration of blood. He did not spit any red blood afterwards, and only a few rusty sputa. One injection was sufficient in this case.

CASE III.—J. D., a respectable tradesman, about twenty-eight years of age, complained of pain in his right side, and spat up a cupful of blood. He was leeches over the side, and treated with infusion of roses and sulphate of magnesia, and afterwards with gallic acid. On the 19th September he again spat blood in large quantity. I was sent for, as his usual attendant was away, and on seeing him found him spitting blood very freely. Not having the ergotine with me, I ordered acetate of lead and opium to be given every two hours during the night, and to keep ice in his mouth constantly. I saw him at nine o'clock next morning. He had spat up a large quantity of blood during the night, and the bleeding had begun again just before I saw him. His pulse was rapid and weak; he was very pale, and much alarmed about himself; there was constant cough, and after each cough he spat a large mouthful of florrid blood. The bubbling in his throat was audible across the room. He had taken the lead mixture and ice all night, but without any apparent benefit.

I immediately injected three grains of ergotine over his right elbow, and left him for two hours. On my return, I found he had not spat any blood since the injection. The bubbling in his throat had quite subsided, and he only coughed occasionally. I desired him to continue the lead mixture every hour, for fear of any return. I saw him next morning, September 21. There had not been any return of the bleeding. He had expectorated some dark bloody sputa, and not more than half a cupful of this. He was desired to take the lead every four hours instead of every hour. His arm was a little painful, but not very much so; he

did not complain of it. That evening at six o'clock he began to cough violently, and again the blood came up in large quantity. I injected three grains of ergotine into left arm, but this did not seem to have any effect, as the bleeding continued during the night. As his arms next morning, 22nd, were both a little painful, I did not like injecting him again, so trusted to the lead given freely, and also salt and water. This somewhat checked the bleeding, but on the morning of the 23rd he said he again felt the bubbling coming on, and as he had taken a good deal of lead, I tried the ergotine again, this time giving him four grains. This again completely stopped the hæmorrhage for twenty-four hours. I repeated it on the 24th, and he had no return of the bleeding afterwards.

CASE IV.—The next case was one of acute albuminuria. W. Budds was admitted into South Infirmary suffering from acute dropsy. He had an attack of scarlatina about three weeks previously, from which he apparently soon recovered; but about the seventeenth day after, he noticed the dropsical symptoms, and came into hospital. He was treated with diaphoretics and afterwards with pulv. jalapæ co.; this soon brought down the anasarca to a slight puffiness of the eyelids in the morning, and slight pitting about the ankles. The urine, which had been smoky and albuminous from the first, became suddenly quite red, evidently containing a good deal of blood. He was dry cupped and got gallic acid without any benefit; and, as the hæmaturia continued for several days, I determined to try the ergotine. I injected five grains into the right arm, which caused some pain and redness, and required a cold water bandage to reduce the heat and swelling. This completely checked the hæmorrhage for several days. I then returned to the gallic acid, and he had no further return of it.

CASE V.—P. Connell, a night watchman, was admitted into hospital with cardiac disease of old standing, and an attack of acute dropsy, caused by exposure to wet. The urine was highly albuminous. He improved under treatment and was able to sit up, when he began to pass pure blood from the kidneys. I injected four grains of ergotine with very little effect, as the urine was just as bloody next day. I then injected five grains, and he immediately complained of his arm, which was soon red and painful round the part injected. This had the desired effect, as the urine was passed quite free from blood, clear and healthy-looking, but still containing albumen. This continued for nearly a week, when the red colour again appeared; another injection had the same effect, and I then put him on nitric acid and iron. He had no return of the hæmaturia. He left the hospital, and died shortly after of congestion of his lungs, caused by exposure to cold outside.

I tried ergotine in two other cases of hæmoptysis with the same effect. They were slight cases, both of them depending on tubercular deposition,

and in each case the blood-spitting stopped within a few minutes. The solution used was one part of ergotine (prepared by Smith of Edinburgh), one of water, and one of glycerine. This is rather thick, and I think less glycerine and more water would make a better fluid for injecting. When first I used it I dissolved it in spirit and water, after Langenbeck's formula. but this invariably caused irritation, and gave rise to small boils, which the solution in glycerine and water did not. These cases are so striking that I venture to bring them before the Society, as I believe the use of ergotine, sub-cutaneously injected, will prove of the greatest use as a rapid, safe, and almost certain means of checking hæmorrhage from any organ, but more particularly from the lungs. Lately Dr. Little, of Dublin, has published a paper on the treatment of typhoid fever in the *Dublin Journal of Medical Science*. He says, in speaking of hæmorrhage from the bowels in that disease, that he relies now principally on the sub-cutaneous injection of ergotine for checking that dangerous complication. I believe the use of ergotine, sub-cutaneously, is entirely due to Professor Langenbeck, who used it in the treatment of two cases of aneurism with success. These cases are recorded in the year-book of the Sydenham Society for 1869. He says he was led to employ it in these cases from the consideration that its action on the uterus and on the arteries was identical, and consisted in inducing contraction of the organic muscular fibres, and he hoped to diminish the aneurism by causing contraction of the muscular fibres scattered over it. I tried it myself in one case of aortic aneurism, but it had no effect on the progress of the disease, nor did I expect it would. I used Langenbeck's formula at first, but it invariably gave rise to a small boil at the seat of the puncture; on omitting the spirit from the solution this ceased to be the case. Dr. C. Ritchie, of Manchester, has published some cases of hæmoptysis, treated by injection of ergotine, in the *Practitioner* for December, 1871. Dr. J. W. Balfour, of Edinburgh, has recommended the hypodermic injection of ergotine in hæmorrhages of various kinds in the *Edinburgh Journal*, July, 1870. Dr. W. A. Jamieson, Berwick-on-Tweed, has also published some cases in the *Brit. Med. Journal*, 1871. He used the ergotine dissolved in simple water.

From the effects I have seen from this drug, I believe the dose should be fully five grains at each injection. When it has failed I think the dose was insufficient, and when the solution is thick it is difficult to be quite certain that the patients get the full amount unless care be taken in using the syringe. The ergotine was procured from Messrs Smith of Edinburgh.

*Case of Post-partum Hæmorrhage treated by Injection of Perchloride of Iron.*—At three o'clock, on Thursday, September 26, I was called to visit Mrs. J., residing in Tuckey-street, who was suffering from severe flooding

after delivery of her second child. She had been attended by a very skilful and careful midwife and was confined naturally at one o'clock that day. The placenta came away soon after, but with it a good deal of blood. Pressure and cold checked it for a time, but the uterus would become soft, and a regular gush of blood take place every few minutes. Her stomach became very sick and she fainted several times, still the bleeding went on, and I was then sent for. I found her quite blanched in appearance, scarcely any pulse to be felt, and the bed soaked in blood. I removed the pillow from her head and laid her quite flat on the bed, and raised her hips by placing the pillow under them to enable me to see what discharge was coming away. The uterus was large and flabby in feel. I pressed it firmly and expelled a quantity of clotted blood. I now gave a teaspoonful of extract of ergot in a little wine, and repeated it in a quarter of an hour. I kept my hand on the uterus for a little time before I succeeded in causing good firm contraction. When, just as I was congratulating myself that all would be well, a smart gush came on, and although I had my hand on the uterus it became quite soft. I applied cold, and dipped my hand in cold water, but as this had been freely used before I saw her, I did not persevere with it. She now became sick and vomited everything I had given her, and became very faint. I could scarcely detect any pulse in the wrist. I could not keep up the contraction of the uterus the prostration was so great, the nervous system so exhausted, the muscles had not tone enough to enable them to act continuously. I now injected five grains of ergotine into the arm. This seemed to have some effect, but still the oozing went on, and at half-past four the case seemed to be desperate. She was so weak that another severe gush might kill her, and her stomach was so irritable it was impossible to give her anything; brandy, whiskey, etc., all coming up at once, and only seeming to make her worse, the effort of vomiting always causing a gush of blood. On first seeing her I had introduced my hand into the uterus and turned out some clots, and hoped to excite contraction by this means, but without result. Having failed by every means to check the bleeding, I considered the only chance of saving her life was to inject the solution of perchloride of iron, as recommended by Dr. Barnes. I went home for the instrument, and asked Dr. Harvey to come and see the case with me. He did so, and fully agreed that it was a very extreme case, and that if the bleeding was not checked by some direct styptic the woman would die. She was so prostrate there was not much chance of the uterine fibres contracting firmly again, or remaining contracted for any time; and one severe gush would certainly terminate her existence. We therefore mixed two ounces of strong solution of perchloride of iron in six ounces of warm water. I then introduced the tube, quite up to the fundus of the uterus, and taking care to fill the syringe with the fluid, so as to avoid injecting any air with it, I

slowly injected the entire of the solution. Some of it flowed out, but most remained in. I withdrew the syringe and applied a napkin to the vulva. Dr. Harvey kept his finger on the radial artery, and could scarcely detect the slightest flutter of a pulse. The heart's action was rapid and tumultuous. She did not seem to suffer in the least from the injection; no symptoms of shock showed themselves; there was no further bleeding; and the uterus felt considerably firmer than it had done previously, but was still very much softer and larger than it ought to be. A large pad and binder were now applied, and she was ordered a spoonful of chicken broth every half hour; her head to be kept low and not to be stirred in any way. We saw her in three hours; she had not vomited since; had taken about two ounces of broth; the countenance was a little brighter; pulse much the same; no bleeding at all since, only one napkin stained black from the perchloride; no pain on pressure. Next morning we found she had had some sleep during the night. Pulse somewhat stronger, becoming quite distinct in the wrists but very rapid; no sickness of stomach; complains of noise in her ears like singing of a kettle; cannot raise her head off the pillow, as she feels giddy; no pain or tenderness over the uterus. There were several napkins stained with the black discharge, but not as much discharge as usual, and no smell from it. She was ordered milk and broth freely. She steadily recovered. The milk was fully established on the third day, and she was able to nurse her child. She had no bad symptoms whatever, and only that she was so extremely weak and pallid, there was no indication of what she had undergone. Under the use of iron she has now nearly quite regained her strength and colour. The result of the injection of perchloride of iron in this case was most satisfactory. Without it this woman would have undoubtedly died. It acted immediately without causing pain, or any unpleasant symptom whatever. What I most dreaded was shock to the system from the injection of the fluid into the cavity of the uterus; and as in her state any shock would have been fatal, I must say I used the syringe with fear and trembling, never having seen it used before, but having the advantage of Dr. Harvey's advice and assistance gave me additional confidence; and from what I saw of the effects of the injection, I would not now hesitate a second to resort to it again, if I met a similar case, or one in which the usual remedies failed, without allowing the case to go to such an extreme length as this one did from loss of blood, before we tried the perchloride of iron.—*November, 1872.*

*Cases of Cataract Extraction (Exhibited).* By H. MACNAUGHTON JONES, M.D., F.R.C.S.I., Surgeon, Cork Ophthalmic and Aural Hospital.

MR. PRESIDENT,—The cases I will now show to the Society have all been operated on recently. It is difficult to bring many cataract patients together after operation, as they are mostly from the country, and return



home immediately on their dismissal from hospital. I will now, however, show six cases to the Society in various conditions after operation, two having been operated on within the past ten days. I have very little experience of the old flap operation, and have of late given up performing it. I do not know why this is, as the few cases in which I operated by this method resulted successfully. But the advantages of the Graefian operation, and the modifications of it as at present practised, are so apparent (as far as the after results are concerned) that I invariably adopt it. The first case which I show you has been operated on some few months since, by the original operation as introduced by von Graefe, i.e. the incision carried through the corneo-sclerotic tissue, not involving any part of the cornea, and the iris removed as recommended by him. The patient can now, by the aid of a  $4\frac{1}{2}$ -inch lens, read very small type; there is little or no deformity, the upper eyelid covering the iridectomy which was performed simultaneously with the extraction of the lens. I do not see the force of the objection that the removal of the iris causes deformity by interference with the normal condition of the pupil, for if the iridectomy be carefully performed and not made too large, it is almost (as you see in this case), unnoticeable; and when a patient can make such good use of the organ as this woman does, I am not tempted to adopt, as yet, more recent suggestions which tend to leave intact the iris during extraction. As a rule, I do not take away so much of the iris as has been recommended by some, and I have seen such excellent optical results following a moderately sized iridectomy, that I generally am satisfied with the amount exemplified in these cases. The five other cases which I exhibit have not been dealt with in a precisely similar manner to this one you have just looked at. The Graefian operation is modified in so far that the incision is only partly made in the fibrous tissue, the knife being made to cut a curve line or section of the cornea. Most of the patients operated on in hospital being of the poorer class, and having the characteristic sunken eye and prominent brow of the Irish, this operation, in which the edge of the knife is everted and directed forward, will be found the easiest of performance. The old woman is a typical example of this class of patient. She has a very deeply set eye, and was exceedingly troublesome and restless, taking methyline badly. She is also an instance of the employment of the hook in a case where a lens by accident or force slips down behind the iris during operation. This woman, after the completion of the incision and laceration of the capsule, during the extraction of the lens, began to vomit violently; on re-opening the lids when the vomiting ceased, I found the lens had slipped down nearly entirely behind the iris. Taking this hook which I show you, (made after a pattern of Mr. Streatfield's by Weiss), I slowly passed it gently down, and sticking it posteriorly in the lens I withdrew it with but a slight loss of vitreous. She has recovered with excellent vision.

I never operate without this hook or a pair of them ready in case of emergency, and it has often enabled me to extract a lens which otherwise I might have found it an extremely difficult matter to succeed in doing. I never now pass in any spoon or scoop to withdraw the lens. I have had at times excellent results after the scoop operation, but lately have abandoned it altogether, as one more likely to be followed by loss of vitreous and subsequent inflammation than any other. In the patient Mills, the pupil is partly yet filled with opaque matter and portion of the capsule, which is rapidly absorbing. He can now walk about and read large type. I intend to perform a secondary needle operation on this patient. He had fully formed cataract in both eyes. In the other two the incision has barely healed, the same operation having been performed in both cases without an accident. In one the result promises to be admirable, as he has got a nice clear pupil, and very excellent vision. In the other we have exemplified one of those unfortunate cases where retinal disease interferes with the optical results of the operation. The man got on well, and, as far as the mere operation was concerned, everything was most successful; but on examining the eye afterwards with the ophthalmoscope, I found extensive atrophy of the retina, with retinitis pigmentosa, which accounts for the imperfect results, as he can but barely discern objects. He has been blind of the eye operated on for twenty years, and the other eye has also got a cataract which I intend to remove on the complete recovery of this eye.\* His perception of light was excellent before operation, which led me to anticipate a favourable issue. I may here mention that I always use the bichloride of methyline in cataract, and indeed in all eye operations which require the use of an anæsthetic, even enucleation, but in any protracted operation, as excision of the contents of the orbit, I resort to chloroform. After over a thousand (almost daily) administrations, extended over five years, I can bear testimony to the value of methyline in all operations which can be speedily performed. It is rapid in its action, perfectly safe in my experience, and not followed by any unpleasant results; while, as a rule, it produces perfect anæsthesia in from one minute and a half to two minutes.—*April 1, 1873.*

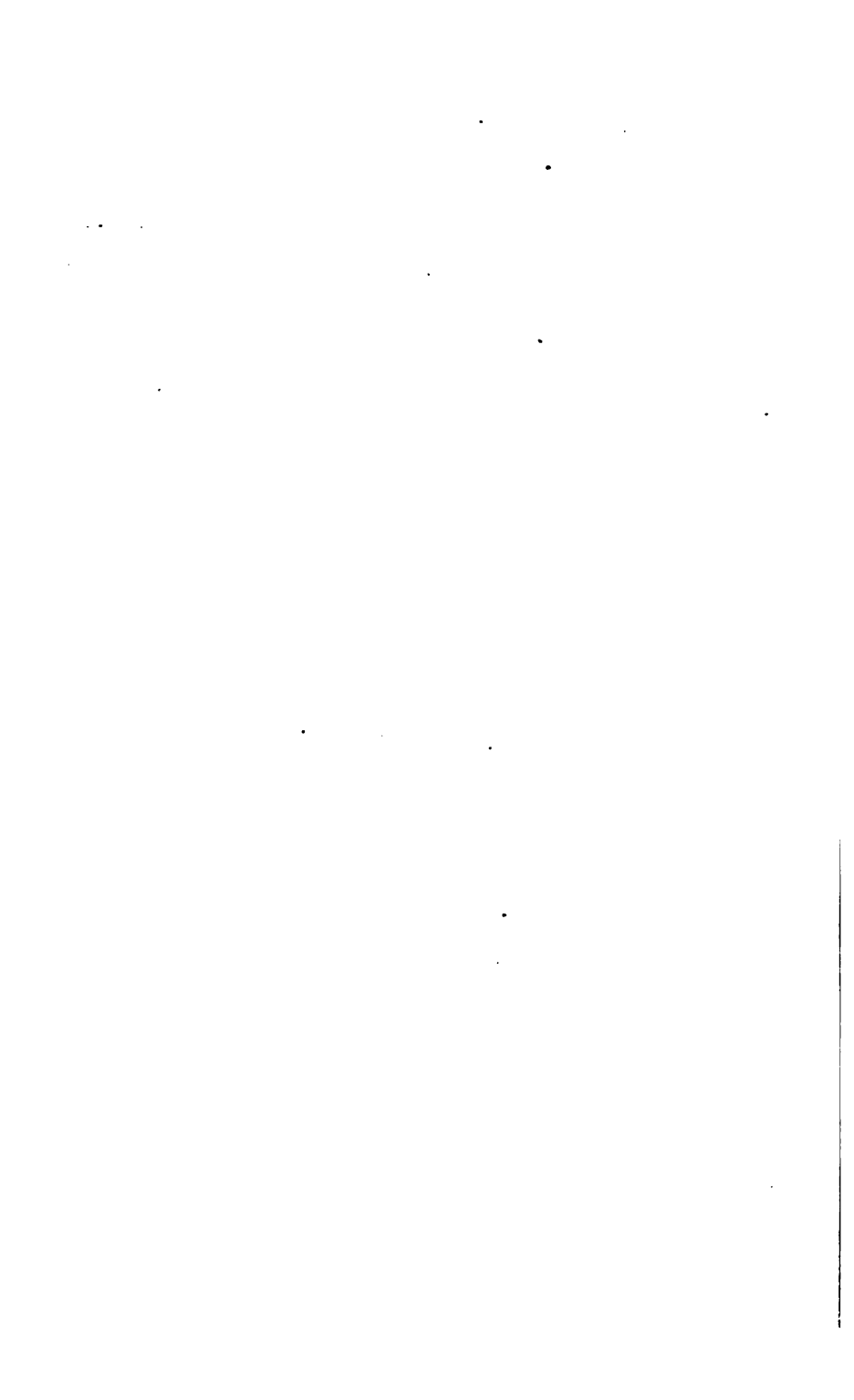
*Two Cases of Placenta Prævia. Both Mothers and one Child Saved.* By J. P. GOLDING, M.D., one of the Physicians to the Cork Dispensary and Maternity, and Assistant Physician, North Charitable Infirmary.

UNAVOIDABLE hæmorrhage, from presentation of the placenta, has been always looked upon by accoucheurs as being attended with more real danger to the patient than any other complication. "The attachment of the placenta to the mouth of the womb," Dr. Collins observes, "is one of the most dangerous complications to be met with in midwifery."

\* I have since operated on this eye with the best results.

Rigby, Ramsbotham, and Dewees make similar assertions. In his work on the *Theory and Practice of Midwifery*, Churchill records 174 cases, with a mortality of 1 in 3. Sir James Simpson tabulates 654 cases, with a mortality to the mothers of 1 in 3, and he compares this mortality with that of the two most fatal epidemics of modern times—yellow fever and Asiatic cholera. In the yellow fever, in Gibraltar, of 1828, the mortality was 1 in  $4\frac{1}{2}$ , and in the cholera of 1832–3, about 1 in  $3\frac{1}{2}$  of those attacked in England died; so that the subjects of placenta prævia are in as great peril of life as persons attacked with yellow fever or Asiatic cholera; and further, it may be stated that in one of the most formidable operations in surgery the mortality is 1 in 6 or 8, or one-half that of placenta prævia. It is not my intention for the present to follow up the opinions of the different authors upon the best line of treatment in this formidable complication, upon which it will be interesting to hear the opinions of the very experienced practitioners present, but merely to detail the history of two cases of that most favourable and very rare termination of placenta prævia, in which the placenta had been forcibly ejected through the os uteri, at a time varying between some hours, as in the first case, and a very short interval, as in the second. I find that this favourable termination has been only noted three times by Lee and Smellie, five times by Ramsbotham, and only one each by Baudelocque, Pergret, Collins, and Maunsell. The first of my cases occurred in the country, six years ago. I was called by the herdsman of a neighbouring farm to his wife in the night. He said he came in a hurry, being told by the “women” they felt something pass, after tremendous flooding, instead of the child. I went with him a distance of two miles, and upon examination I found that the “something” was two placenta attached by their chords to two children in utero, which I lost no time in delivering by the feet. They told me she had smart flooding for some hours, that immediately before the ejection of the placenta it was very great, but that since then it at first moderated, and finally ceased for a few hours almost entirely. This woman recovered very well, with nothing but hot milk and tea, there being no other stimulants, and being only on a visit, I had not even a dose of ergot.

The other case I met with was a maternity one, near the barracks, to which I was called by Mrs. Murphy, our matron, who, upon examination, was able to discover the placenta in the vagina. I found it so with part in the os uteri. The patient was extremely low from the great flooding which she had before the ejection of the placenta into the vagina, but which was afterwards very much moderated. After giving her a dose of ergot and some brandy, I brought away the placenta, and an arm having presented, I turned and instantly delivered a full-grown child, with suspended animation; but after ten minutes of Sylvester's method, I had the satisfaction of resuscitating it. Both mother and child are still doing well.





Mr. STOKES on the Treatment of Luxations by Robert's Modification of Jarvis' Adjuster.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

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ART. VI.—*On the Treatment of Luxations by Robert's Modification of Jarvis' Adjuster.* By WILLIAM STOKES, Professor of Surgery, Royal College of Surgeons; Surgeon to Richmond Surgical Hospital, &c., &c.

IN the winter session of 1865–1866, I witnessed, in the *clinique* of Professor Nélaton, some cases of luxations successfully treated by Jarvis' adjuster, and from the manner in which the eminent French professor spoke of the value of the appliance, and the results I saw obtained, I formed a high opinion of it. A short time subsequently, a modification, and in many respects an improvement on the original adjuster, was devised by M. Robert, of Paris, and it is to this appliance that I wish more especially to draw attention.

I may mention that I have already brought this instrument under the notice of the Surgical Society of Ireland, and also of the Surgical Section at the annual meeting of the British Medical Association, held in Birmingham last year. A larger experience of the appliance than I then possessed, has gone far to confirm me in the favourable opinion I at first formed as to its value.

In overcoming the muscular resistances which oppose the reduction of dislocations, the surgeon has, as a rule, hitherto employed one or other of two kinds of force, viz., either physical or mechanical. The former has often succeeded when the latter has failed, but

it frequently fails from the surgeon and his assistants being unable by it to use a sufficient amount of force. The mechanical, on the other hand, I am persuaded, often fails from it being applied between two points which, during the attempt at reduction, remain fixed. It appears to me that the great value of the instrument, to which I wish to draw attention, arises from the fact that it combines the advantages of both the physical and mechanical methods of reduction, for while the direction of extension and counter-extension can be altered at will, it furnishes an extending force which is unlimited in principle. The indications, as mentioned by Jarvis, which this instrument is intended to fulfil are—

1. To establish a line of extension and counter-extension between any two described points, and to be enabled to change the direction of the force without any previous relaxation of it.

2. To furnish an extending force which is unlimited in principle, yet easily calculated, and which is perfectly subject to the will of the operator.

3. To be enabled to estimate with mathematical accuracy the amount of force used.

4. To enable the operator to apply the force, whether direct or transverse, either rapidly or slowly, and to retain it on the limb during his pleasure.

That a violation of mechanical principles in the application of force in the treatment of dislocations frequently occurs, and that this leads often to failure and sometimes to grave accidents, which seriously complicate the case, there can be no question, and one prime reason of the frequent occurrence of these failures and accidents has been to a great extent, as Jarvis has rightly shown, owing to the employment of forces which operate from fixed points over which the surgeon has no control. "Thus," he remarks, "if the line of extension happens to be the correct one, he (the surgeon) does not desire it to be changed, but if it happens to be incorrect the force must first be relaxed before he can change it." This difficulty, which the surgeon has often to contend with in attempting the reduction of dislocations, is chiefly evident in cases where the luxated extremity of the bone is driven into muscular tissues which tightly envelope or grasp it. Many illustrations of this might be adduced. I may mention one instance by Jarvis. He observes:—"Suppose the case where the head of the bone is driven into the soft tissues and the neck is closely embraced by them, as, for instance, in some cases of the head of the os humeri, we must first disengage the head before we can even hope

to succeed in reduction; suppose, also, we apply the pulleys; force is steadily and long continued, but owing to the firmness with which the neck is embraced, and the strength with which the muscles contract it is not relieved from its confinement. Is it not plain, therefore, that should the extending point now be subject to the will of the surgeon to move at pleasure, while the force is yet constant and steady, to give free motion to the limb would greatly aid him in reduction and that without increasing the power!"<sup>a</sup>

Many other illustrations I might also mention, as, for example, in certain luxations of the femur where the head and neck are forced obliquely into the muscular tissues, which, tightly embracing the neck of the bone, must, most probably, have to be torn through and, in truth, often are in attempting to replace the bone in its normal position.

The apparatus, which I think goes far in getting rid of these difficulties and accidents, consists of a steel case of the dimensions of an ordinary gun-barrel, open at the upper surface and containing a rack-bar. At one extremity of the steel case the pinion wheel is fixed. The rack-bar constitutes the extending bar. The counter-extending-bar is fixed, not at the extremity of the rack-bar case, as in Jarvis's adjuster, but to the thigh fork, the shoulder collar, or the elbow fork. The shaft of the pinion wheel terminates in a square heel which fits into a corresponding square opening at the extremity of the lever, and which passes through the centre of a ratchet wheel which is fixed to one extremity of the lever. The rack-bar case is so adapted as to fit into the end of the counter-extending bar, and the two bars, the extending bar and the counter-extending-bar, are united by the dynamometer which is fixed by two hooks and which are close to the extremities of the two bars. The effect of turning the pinion wheel by the lever, is to increase the distance between the extending or rack-bar, and the counter-extending bar. This latter is attached, for luxations of the upper extremity of the humerus, to the shoulder-collar; for those of the elbow, to the elbow-fork; and for luxations of the femur, to the thigh-fork. These appliances can also be adapted to luxations occurring at the knee and other articulations.

With these few preliminary observations I may now give (and I shall do so with all possible brevity), the notes of some cases of luxations which I have treated by this appliance.

<sup>a</sup> Five Lectures on the Surgical Adjuster. By Geo. O. Jarvis. Weiss, London, 1846, p. 12.



*CASE I.—Dislocation of Head of Right Humerus Forwards—Reduction.*

Nora B., aged fifty-two, admitted into Richmond Hospital, under my care, on 6th June, 1870. The head of right humerus was displaced forwards; the injury resulted from a fall on her shoulder, which she sustained three hours before her admission. Chloroform was not employed, and the luxation was reduced in less than a minute, the force used not exceeding 100 lbs.

*CASE II.—Dislocation into Axilla—Reduction.*

Richard L., aged fifty-eight, a strong, muscular man, admitted into the Richmond Hospital, under my care, on the 4th August. The injury occurred from the fall off a car. The luxation had occurred twenty-five hours previous to his admission into hospital. I applied the adjuster and at once reduced the luxation, the force used being 180 lbs. Before, however, I succeeded I had twice to alter the direction of the force by rotating the instrument, keeping up at the same time the extending force.

*CASE III.—Dislocation of both Bones of the Fore-arm Backwards—Reduction.*

Thomas C., aged eleven, admitted into the Richmond Hospital on August 7, 1870. The accident occurred from the patient slipping off a kerb-stone and falling. All the usual signs of the accident were present. I at once applied the adjuster and reduced the luxation. The force used was 101½ lbs. For some days the patient suffered from acute inflammation of the joint, which, however, subsequently subsided, and on the 16th August the patient returned home perfectly well.

*CASE IV.—Dislocation of Head of Left Humerus Forwards—Reduction.*

P. Murray, aged forty-five, a strongly-built, muscular man, was admitted into the Richmond Hospital, under my care, on March 4, 1872. The patient stated the accident happened from a fall on the shoulder two days previous to his admission into hospital. Shortly after his admission I was sent for, and having applied the adjuster, I succeeded in reducing the luxation in less than a minute. A much greater force (242 lbs.) than is usually required to effect

reduction in this injury was found necessary. The following day the patient left the hospital, with directions to attend occasionally as an extern patient.

CASE V.—*Dislocation of Head of Humerus Forwards of four months' standing—Non-Reduction.*

J. B., aged fifty-two, admitted into Richmond Hospital, under my care, December 15, 1870. The accident happened from a fall on the elbow four months previous to his admission. The adjuster was applied by me, but in this case without success. I tried the other more ordinary methods, but did not succeed with them either.

CASE VI.—*Dislocation into Axilla of five weeks' standing—Non-Reduction.*

L. D., aged thirty-four, a strong, powerful young man, admitted into the Richmond Hospital, under my care, November 19, 1871. The accident occurred seven weeks previous to his admission. The accident was said to have occurred from a fall on the shoulder. The adjuster was applied in this case, but without success. The ropes and pulleys did not succeed in this case either.

CASE VII.—*Dislocation of Humerus Forwards of three days' standing—Adjuster applied, but owing to the Shoulder-Collar of the instrument being too small for the patient, recourse had to be made to the ropes and pulleys—Reduction.*

Thomas H., aged forty-four, admitted into the Richmond Hospital, under my care, on Jan. 22nd, 1871. The luxation was of three days' duration. The patient was a strong, powerfully-built man, of exceptionally great muscular development. I applied the adjuster, but experienced considerable difficulty in getting the collar to which the counter-extending bar is attached round the shoulder. In getting it round and above the joint the integuments and muscular tissues about the articulation were pushed before the collar, and, of course, a vast amount of the force applied was expended on these structures and not on the head of the displaced bone. This would not have been the case had the collar been larger, and a reduction would then, I have not the slightest doubt, have been easily accomplished. It must be remembered that this collar was manufactured with special reference to the French *physique*, and not for those exceptionally large and muscular persons that are occasionally the subject

of observation in Ireland. On the 27th January I succeeded in reducing this luxation by means of ropes and pulleys.

**CASE VIII.—*Dislocation into the Axilla—Reduction.***

P. D., aged forty-one, was admitted into the Richmond Hospital, last January, suffering from luxation into the axilla. The accident occurred from a fall the day previous to his admission. The adjuster was applied and a reduction effected.

**CASE IX.—*Dislocation of both Bones of the Forearm Backwards of over three weeks' standing—the Adjuster applied and Reduction effected after two attempts.***

T. K., aged twenty-three, admitted into the Richmond Hospital, under my care, September 17, 1870. While out shooting, three weeks and three days previous to his admission, he tripped and fell on his elbow. There was not much pain at the time, but the elbow swelled rapidly. On examination, after his admission into hospital, the right forearm was found to be extended. As in the cases described by Mr. Stapleton, there was complete inability to flex it, and a considerable degree of lateral motion existed. Both bones could be felt posteriorly. Hand slightly pronated, cannot be supinated. Complains of great pain on making any examination of the joint. The first time (September 20) that an attempt at reduction was made, only a partial success attended our efforts—viz., the forearm was got into a better position, being partially flexed on the arm, but it was evident that the luxation was still unreduced. Four days subsequently, a second and more successful attempt was made, the force necessary for the reduction being 189 lbs. This was followed by very violent inflammation in the joint. It, however, soon subsided under the influence of suitable antiphlogistic measures, and although a good deal of stiffness remained in the joint at the time of the patient leaving hospital, yet, when he was brought under the influence of chloroform, perfect flexion and extension, as well as pronation and supination, could be produced.

**CASE X.—*Dislocation of Head of Humerus into the Axilla—Reduction.* Reported by Mr. Mulock.**

Charles Torkington, aged fifty-five, by occupation a cooper, was admitted into the Richmond Surgical Hospital, under Mr. Stokes' care, on September 22nd, 1872, suffering from a dislocation of the



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head of the humerus into the axilla, which he stated he received about thirteen hours previously, in consequence of a fall on the shoulder. All the usual signs of the accident were present. Attempts were made to effect reduction without the aid of any mechanical appliance, but these failing—doubtless owing to the great muscularity of the patient—Mr. Stokes then adjusted Robert's apparatus, and, in sixty seconds from the time the instrument was applied, reduction was accomplished. The force used was equivalent to ninety kilogrammes. The following day the patient returned home.

CASE XI.—*Sub-coracoid Luxation—Reduction.* Case reported by Mr. Charles Gwynne.

James Doran, a cattle drover by occupation, was admitted into the Richmond Surgical Hospital, under Mr. Stokes' care, on November 6th, 1872, suffering from a dislocation of the head of the humerus below the coracoid process. The history of the case is as follows:—

At 9 a.m. of the same day he was driving two bulls to the market or fair of Wilkinstown; by some accident one of the bulls got one of its hind legs entangled in the hind legs of the other, and he went to separate them by catching one of them by a rope attached to a hook in its nose; whilst thus occupied something occurred to frighten the animal and caused it suddenly to start its head to one side, wrenching the arm of the man, Doran, with great violence, and throwing him to the ground, dislocating his arm in the manner aforementioned.

Between two and three hours after he arrived at the Richmond Hospital in Dublin, reduction was attempted by the usual methods, by the resident pupils on duty, but they were quite unsuccessful, owing, probably, to the extraordinary muscular development of the patient.

At 1:30 p.m. the patient was seen by Mr. Stokes, who at once determined on trying Robert's modification of Jarvis' apparatus. The result was most satisfactory, and placed beyond doubt the efficiency of the apparatus.

Some conception can be formed of the great muscularity of the patient, by the fact that it took a force equal to 130 kilogrammes, measured on the dynamometer attached to the instrument, to effect reduction of the dislocation.

**CASE XII.** — *Sub-coracoid Luxation — Reduction.* From notes taken by Mr. Charles Gwynne.

J. Gibbs, a powerfully built man, aged fifty-six, was admitted into the Richmond Surgical Hospital, under Mr. Stokes' care, on March 18th, 1873, suffering from a luxation of the right humerus beneath the coracoid process. On the previous evening he met with the accident which caused the dislocation, but, being at the time almost insensible from drink, he was unable to give any account of how it occurred.

When he presented himself next morning at the hospital, his shoulder presented all the usual signs of sub-coracoid dislocation. Shortly after his admission he was seen by Mr. Stokes, who at once applied Robert's luxation adjuster. In two and a half minutes after the apparatus was fixed the dislocation was reduced, the amount of force made use of, as marked by the dynamometer attached to the instrument, being equal to 250 lbs. The following day the patient returned home.

In the preceding cases I have given, as will be seen, those in which the adjuster did not succeed, as well as those in which it did. In two of the former cases, however, it will be remembered that the accident happened at a very considerable period previous to the attempt at reduction. In one case four months, and in the other seven weeks, and in the third case, owing to the large proportions of the patient, the instrument could not be satisfactorily adjusted.

I would be sorry to say that this apparatus should entirely supersede the older methods of reduction; but it is certainly of very great value as a "means the more" in the treatment of this all-important class of injuries. The results, too, obtained by Nélaton, Hamilton, and others, have shown that the adjuster, of which the one under consideration is a modification, and in many respects an improvement, is practically as well as theoretically superior, in certain cases, to the appliances and devices ordinarily made use of; and there can be no doubt that it certainly enables the surgeon to get rid of the effect of being confined to fixed points while applying the most powerful extension and counter-extension in the reduction of luxations. Objections may, perhaps, be raised to this instrument from its being so complicated and necessarily so costly, but such an objection hardly deserves a passing notice when we reflect that it enables the surgeon to get rid of a great difficulty which he has

always experienced in the treatment of some varieties of luxation—one which has often become quite insuperable, and forced him to abandon the attempt at reduction as wholly impracticable, and condemn the sufferer to be a hopeless cripple for life.

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ART. VII.—*Case of Spontaneous Aneurism of Common Carotid Artery, left side—Ligature of Artery in Lower Stage of its Course—Cure of Aneurism.* By CHRISTOPHER FLEMING, M.D., Ex-President Royal College of Surgeons; Late Surgeon to the Richmond Hospital; Visiting Surgeon to Steevens' Hospital; Senior Member of the Court of Examiners, Royal College of Surgeons, Ireland, &c., &c.

SOME of the details of the following case, though it is of comparatively distant date, possess points of practical interest which appear to me to entitle them to a special record. The notes taken during the progress of the case in hospital, of which the following may be considered as a brief summary, have lately fallen under my observation.

A Welshman, aged forty years, an ostler by trade, was sent to me from North Wales, with a tumour on the left side of the neck, having many of the features of aneurism of the carotid artery. He was admitted into the Richmond Hospital in August, 1852. The tumour was about the size of a large orange, somewhat irregular in shape, and projected so much externally as to render the integuments covering it remarkably tense. It was imbedded behind the angle of the jaw, forcing the parotid gland upwards, and bulging into the fauces, where it could be seen and felt, pushing forward the left arch of the palate, and encroaching beyond the mesial line behind the pharynx and the upper part of the larynx. Posteriorly, it passed beyond the tube of the ear into the occipital region, where it distended outwards, the upper attachment of the sterno-mastoid muscle, its anterior margin advanced on the body of the jaw, about midway to the symphysis, and inferiorly it might be said to have been bounded by a line parallel with that of the lower edge of the cricoid cartilage. Its transverse measurement along the base of the jaw was five inches, and was increased about half an inch in the act of deglutition. Its vertical measurement along its central portion was about three inches. There is a cast of these several outlines in the



museum of the Richmond Hospital, and also a drawing by Conolly, executed with his usual graphic accuracy, of which the accompanying wood-cut is an accurate representation. The integuments covering the tumour were of a natural colour, and presented marks of leech bites and cicatrices from ulcers, the results of several local stimulating applications. At the lower part of the neck numerous superficial and deep-seated veins of large size were traceable, and at the outer and back part of the tumour the external jugular vein was to be seen crossing obliquely, and bedded in its walls. Pulsation, in some points less evident than in others, was yet very manifest, both to the eye and touch, especially in the throat, and was controlled by compression on the main vessel. The expansile and contractile character of the tumour, though limited, was also seen and felt. On auscultation there was a systolic and diastolic bruit, and accompanying the systolic, some ringing and musical murmurs were audible, which were much modified in their insensibility by the amount of pressure made on the tumour. These several sounds were distinguishable by the naked ear. The man stated that twenty years previously he had an attack of what appeared, from his account, to have been acute tonsillitis; that for a month he was unable to open his mouth satisfactorily; that subsequent to this period a small tumour, about the size of a marble, made its appearance beneath the angle of the jaw; that it progressively increased in size, but that only within the last four months had it even approached its present magnitude, and this rather suddenly, whilst stooping at his ordinary stable work. He was now, for the first time, attacked with an uncomfortable feeling in the head, and with occasional difficulty in his respiration. The latter complaint recurred in some degree when he stooped, or exerted himself much in walking; otherwise, he suffered nothing worth noticing. He had no pain in the tumour, or in its immediate vicinity; no fixed pain in the head; no giddiness. He could lie indiscriminately on either side and in any position of the head, but was liable to sudden startings from sleep, with sensations of dyspnoea and dysphagia. His voice was unaffected. He was a man in tolerably good bodily health, of medium stature and framework, and of a remarkably placid, though nervous temperament. At the time of his admission into hospital his respiration and his circulation were tranquil, his ordinary range of pulse was from 76 to 80, and his digestive functions were healthily performed. The only abnormal, vital, physical sign discernible, was a loud bruit following the cardiac systole, persistent and traceable from the apex



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of the heart, where it was very intense, along the tract of the aorta, towards its arch. No bruit of note could be detected along the thoracic or abdominal aorta; neither in the superficial arteries were there visible those indications of cardiac valvular lesions described by Dr. (now Sir Dominick) Corrigan. The brachial artery and the arteries of the forearm were free from these, so also were the femoral. There was no irregularity of the action of the heart or of the pulse, and there were not, nor had there been, any attacks of dyspnœa beyond those already specified, and they appeared to be distinctly attributable to the local pressure of the tumour.

After much deliberation, all doubts respecting its aneurismal characters being removed, the ligature of the common carotid artery was decided upon. The operation was performed on the 18th Aug., in presence of my colleagues at the hospital, and many other professional friends. No chloroform was administered, and the artery was necessarily tied low down in the inferior stage of its course, below the omo-hyoid muscle. Much caution was required in the first steps of the operation from the meshes of large, tortuous, and cross veins, particularly from the external jugular, which lay in the line of the incision, and much delay and embarrassment occurred in passing the ligature around the artery, as well from the extreme depth at which it lay, as from the total absence of any pulsation in it, and the condensation of the surrounding structures from previous thickening. Moreover, the man was so feeble and faint, that it was difficult to detect any pulse at the wrist. The internal jugular vein was full, and so distended as often to cover the artery, and to render the passing of the aneurism needle under it a matter of no small difficulty. Again and again I thought I had the needle around the artery, when, slipping away, it would roll from the needle; ultimately I succeeded, and, inserting a ligature in it, secured it under the vessel, and removed the needle. The man, throughout the whole, and necessarily tedious steps of the operation, conducted himself with the greatest calmness and steadiness. He was now pallid and feeble, and it was deemed more prudent to wait for somewhat of reaction before the artery was tied. After a time this was established, and though the pulse was yet feeble, I took the opportunity, and tied the artery as near as possible to the lowest part of the wound, having first ascertained, by compressing the artery, that the pulsation in the aneurism was fully commanded. No appreciable effect was produced as regarded the sensations of the patient; no uneasiness in the head; no faintness; no cerebral derangement

of any kind; on the contrary, the man gave directions himself as to the mode of removal to his bed in the most perfect composure. The effect of the deligation of the artery on the aneurism was most satisfactory; its pulsation was fully stayed, and its tension and size completely altered. The lips of the wound were brought together by strips of adhesive plaister, and the ligature adjusted in the usual way.

From the date of the application of the ligature until its separation, on the 21st day after the operation, the progress of this case was most satisfactory. There was a return of pulsation in the tumour on the evening of the second day, but it subsided after forty-eight hours or so, and did not recur. With this exception, there was no other untoward symptom. From day to day a diminution in the size of the tumour took place, and its essential aneurismal elements wholly disappeared, a distinct surrounding induration alone remaining, which was traceable when the man left hospital, in the first week of October.

In the following April I had occasion to visit Holyhead, and made it my business to see him. His general health was much improved; the cardiac sounds were decidedly improved; the systolic bruit was much less rough and prolonged, and the cardiac action tranquil. There was a tumour in the neck, but occupying its middle region, the upper portion of the original tumour having completely disappeared. Not a trace of pulsation was discernible, but the peculiar diastolic murmur, accompanied with the whistle above noted, was communicated to the naked ear, and through the stethoscope. There was no tumour in the left palate; it had completely subsided. There was a projection along the side of the pharynx, near the tonsil, but it gave no annoyance.

I should apologise for the length of this communication. My excuse is the special interest and importance of its subject. Carotid aneurism is, comparatively, of rare occurrence; its diagnosis is often obscure and difficult; its cure is effected, almost necessarily, by ligature of the main artery; and the results of this operation, its casualties, and its contingencies, are too often very treacherous. In the present advanced and almost exhaustive state of the subject of aneurism at large, both in its clinical and in its pathological aspects, this class of aneurism has, doubtless, received due attention. The record of this case will, I hope, tend to confirm views, instructive and encouraging to the physician and the surgeon, where doubts may be entertained as to treatment by operation.

ART. VII.—*Practical Notes from Kilkenny County Infirmary.*

By ZACH. JOHNSON, A.M., T.C.D., F.R.C.S.I.; Licentiate, King and Queen's College of Physicians, &c., &c.

ON THE TREATMENT OF FRACTURES OF THE FEMUR BY A NEW METHOD AND APPARATUS.

THE treatment of fractures of the femur has always been a subject of great interest to the profession. Its importance is indicated by the amount of attention it has engrossed, the many treatises and monographs which have, from time to time appeared about it; the different plans of treatment proposed, and the various splints and apparatus which have been exhibited and recommended for its successful management; and when it is considered that all of these have their merits, that many enjoy the impress of the highest authority, while each successive design proposes to obviate some defect or objection in its predecessors, it might be thought that there was little room left for improvement, and none for originality.

The management of a fractured thigh is beset with difficulties known to every experienced and practical surgeon, and it cannot be said that any of the apparatus heretofore devised completely or satisfactorily fulfil the intentions of the inventors or the requirements of the practitioner. It will not, then, be considered presumptuous to bring under notice, in addition to the many in use, one which has been subjected to the test of hospital experience for many years, and has been found to possess advantages over its rivals, which the following description of its principle and construction will explain.

It is not proposed to enter here into a complete dissertation on the treatment of fractured thigh, and the various plans from time to time proposed and recommended by eminent surgical authorities, nor to examine into the respective merits of the inclined and extended positions. With the received opinions on these points it is presumed the readers of this article are already acquainted. The arguments of the late lamented Professor Houston, so lucidly propounded in his admirable little *brochure* on the advantages of the extended position in treatment of fractures of the lower extremity, leave nothing to be said on this point. As a rule, then, the extended position is that now accepted as the best, when practicable. The cases are unusual which do not admit of it, though it may here be incidentally observed that there are two in which it is not available, and though these are rare, as they occasionally present

themselves in actual practice, they should not be overlooked. The one is where the fracture occurs in the upper third of the femur, in which case the upper fragment may be tilted up, almost at a right angle, by the spasmodic action of the psoas and iliacus muscles. Here there is no resource but the inclined plane for some days, until the irritability of the muscles has been overcome, when the limb may be gradually brought down to the horizontal position, and the extended plan of treatment ultimately put in practice. The other where, with a knee ankylosed at an angle, the femur is broken; and here, obviously, the inclined plane alone is available throughout.

It is, however, with the extended position we have more immediately to do. It is for the more effective management of the limb in that position the apparatus about to be described was specially devised and subsequently tested, although it will be seen by-and-by, it is capable, on an emergency, of being adapted for use in the inclined position also.

The objections to Desault's long splint, with its oblique inguinal and ankle straps, its defective extensile powers, and tendency to excoriate the perinæum and groin, are too well known to require further comment. The paramount objection, obviously, is the loss of power arising from the obliquity of the extending and counter-extending forces. The minor objections are several, such as the danger of excoriation of the groin and perinæum above, and the ankle and instep below, interference with the use of the bed-pan, &c., &c. These objections all hold good, more or less, in the case of Liston's and Bulley's splints, which, although they present some advantages, retain many of the most serious defects of Desault's apparatus.

Our primary object in the management of a fractured thigh is, that the extending and counter-extending forces should antagonize each other in a *direct* line, which line should be parallel to the long axis of the limb. On this principle depends the efficiency of all our expedients to counteract the inevitable tendency to shortening, caused by the contractions of the powerful femoral muscles. Here it is that Desault's plan fails, the obliquity of the antagonizing forces necessarily entailing great loss of power. Next in importance is the condition that the power should be constant and persistent, such as to weary and overcome the rebellious muscles, while our aim should be to accomplish this in such a way as shall be thoroughly efficient and at the same time in the least possible degree distressing

or inconvenient to the patient. With a view to devise means by which to keep up a direct extending and counter-extending power, various expedients have been proposed. For this purpose the weight and pulley was long since adopted and has had very gratifying success in the hands of many practical surgeons. It has been frequently used with satisfaction in the Kilkenny County Infirmary by my colleague and myself. About the year 1852, I published, in the *Dub. Med. Press*, the details of a most remarkable case where a femur, shortened after a first fracture, was brought to its normal length by this treatment, when accidentally broken a second time, about a year or more afterwards; and Dr. Smith, of Donoughmore, has drawn attention to the fact that the weight and pulley was used to effect extension of the fractured thigh, so far back as 1829, by Dr. Daniell, of Georgia, in America, and by Sir P. Crampton, in the Meath Hospital (*Medical Press and Circular*, 23rd June, 1869).

But the weight and pulley, however effective and admirable in its action, has its objections, as every practical surgeon must have found. The difficulty of effecting counter-extension, the tendency to drag the patient to the foot of the bed, intolerance on the part of the patient, generally speaking, (if the weight be sufficient to overcome the contractile power of the muscles), all present difficulties which stand much in the way of its universal or even general adoption. Besides it is awkward, unseemly, and inconvenient.

It will be admitted that any apparatus which could embody all the advantages of the several systems now in use, at the same time that it got rid of their several disadvantages, would be a great boon to the practical surgeon, as well as to the sufferer. With such intentions the apparatus about to be described has been constructed. It has been tested amply in actual practice, and the result has been to induce me to submit it to the experience and judgment of the profession.

Among the advantages claimed for the apparatus now proposed, is its simplicity; although a modification of Desault's, Liston's, and Bulley's splints, combining the good points of each, with the addition of several innovations unknown to them, it is simple, easy of application, and, best of all, thoroughly effective. It does not excoriate, it can be so used as not even to incommode the patient, while it confers on the surgeon power, which no apparatus hitherto in use has realized.

The apparatus consists of a single long splint and foot-piece, each of which requires separate description.



The long splint resembles Desault's inside splint, but differs from it in some very essential points. The most important of these is the method of effecting the counter-extension. Instead of the perineal strap, which is open to so many objections, the upper or perineal extremity of the splint, which is slightly concave, is applied directly to the perinæum. It is softly padded on the extremity with caoutchouc, which again may be covered with chamois, silk, lint, or any other movable and non-irritating material. The ramus of the pubis is here made the fulcrum, and it will be seen that, with the foot-piece used, the extending and counter-extending powers act "in directum." The pressure of the splint against the perinæum is borne, so far as past experience has gone, without complaint, and has great and obvious advantages over the perplexing and ineffective oblique inguinal strap of Desault's splint.—(See Plate IV., Fig. 1.)

But, should any objection arise to using this fulcrum, a second one has been provided, the idea of which has been borrowed from Dr. Sayer's ingenious method of treating affections of the hip-joint and knee.

A short splint of strong sole leather or flexible material, about some twelve or fourteen inches long, is provided with a stud or gig-apron button, which is firmly rivetted; this splint is to be attached to the outer side of the thigh and pelvis. This can be effectively done by means of oblique adhesive straps, of sufficient length and breadth, laid on in the manner proposed by Dr. Sayer in attaching his apparatus for extension of the hip and knee. The surface of the splint itself may be made adherent by a coating of starch, or soap plaister, and by these means a degree of fixity can be obtained more than sufficient for any practical purpose.—(See Plate IV., Fig. 1 c.)

In the upper end of the long splint may be seen a series of button-holes, capable of fitting on the stud in the short splint. By transferring the long splint to the outer side of the thigh, the surgeon can now, if he wishes, make this stud the point of counter-extension, an arrangement which has been found perfectly effective, and which contributes immensely to the comfort of the patient.—(See Plate IV., Fig. 2.)

The fulcrum of counter-extension having been decided on, extension is to be effected by means of the foot-piece attached to the other end of the long splint, to the peculiar construction and advantages of which attention is now directed.

By reference to Plate IV., Fig. 3, it may be seen that, by means of a ball and socket joint (*b*) at the back of the foot-piece, it is capable

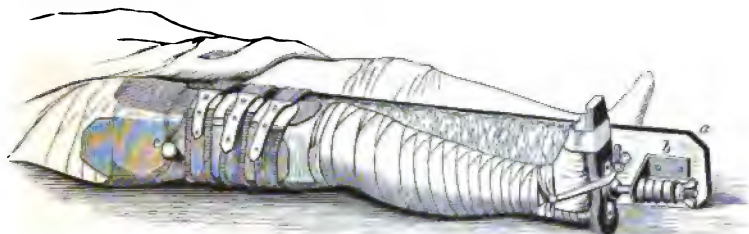


Fig. 1.—Splint applied on inner side of limb. Ramus of pubis the fulcrum of counter-extension. Foot-piece parallel to splint. *a*. Splint. *b*. The standard or fulcrum extension. *c*. The button by which counter-extension is effected, when splint is applied on outer side of limb.

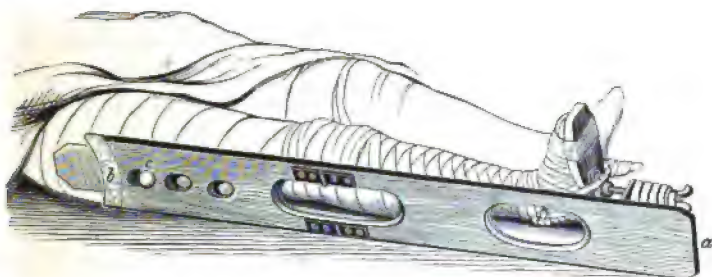


Fig. 2.—Splint transferred to outer side of limb. Fulcrum of counter-extension now the button *c*, acting through whichever button-hole best suits the length of the limb. *b*. The padded end, which rests against ramus of pubis, when splint is applied on inner side. In this diagram the bed has been tilted up, so as to bring more into view.

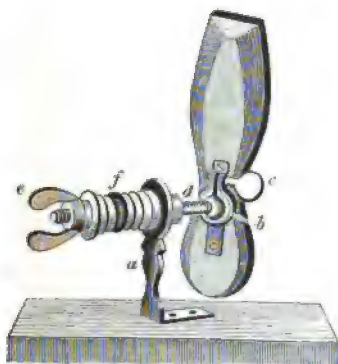
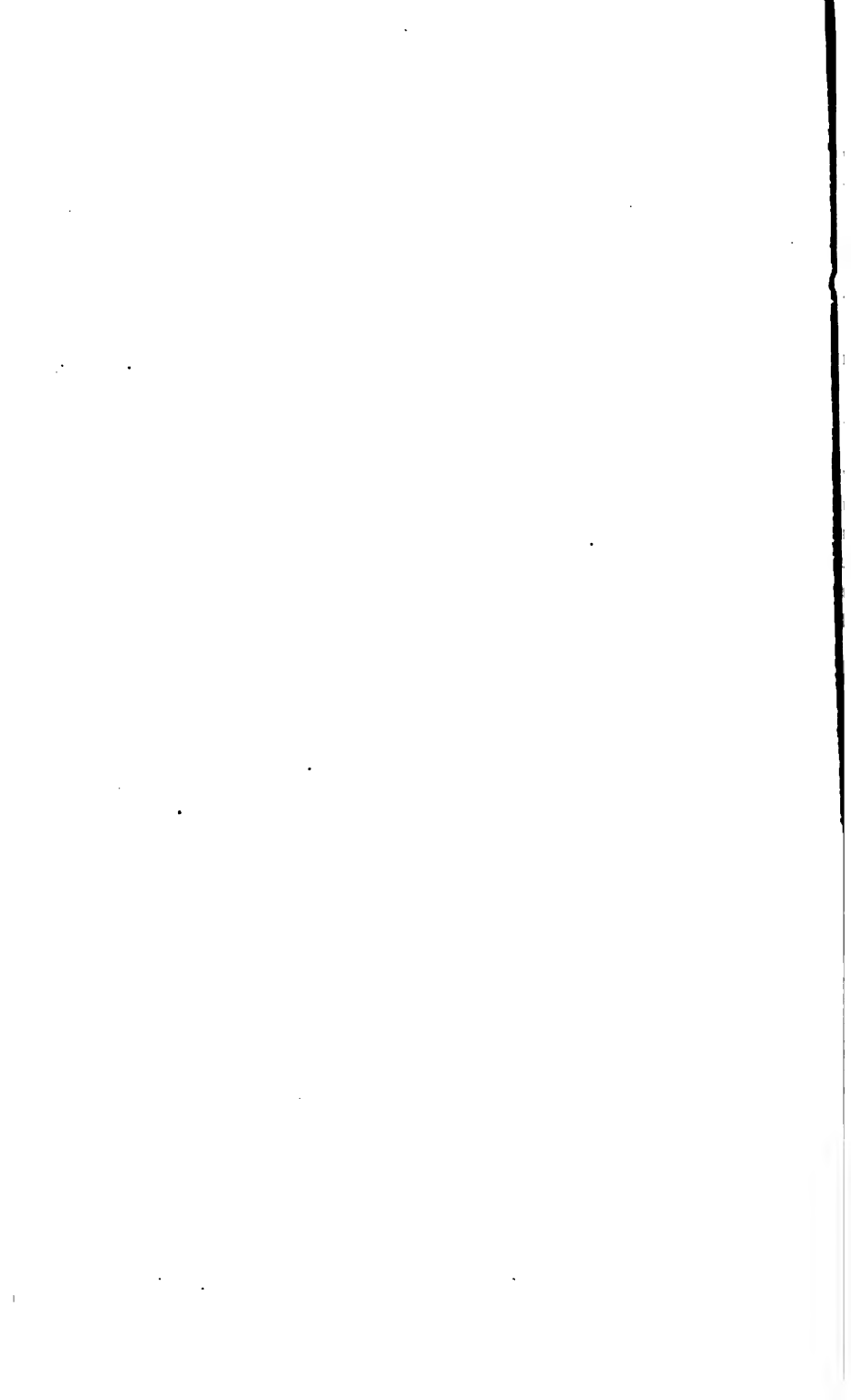


Fig. 3.—Separate view of foot-piece:—*a*. The standard or fulcrum of extension, which admits of being fixed either perpendicular or parallel to the bed. *b*. The ball and socket joint, by means of which the foot-piece can observe any position with reference to the standard *a*. *c*. The pinching screw of the ball and socket joint, which fixes the foot-piece immediately in any required position. *d*. The traversing bar, which runs backwards and forwards through the mortice hole in *a*. *e*. The winged nut, which plays on the thread cut on the corners of the square bar *d*. *f*. The caoutchouc flanges, which, when compressed, draw the foot-piece towards the fulcrum *a*.



of an infinite variety of adaptations, while, by the use of a pinching screw (*c*) provided for the purpose, it can be firmly and immovably fixed in any required position. The ball is riveted on the end of a bar (*d*), which moves horizontally, backwards or forwards, through a mortice hole in the standard, or support (*a*), which is affixed to the long splint. On the other extremity of the horizontal bar a winged nut (*e*) plays, drawing the foot-piece towards the standard, or support (*a*), with great power when required. Between the winged nut and the standard may be observed a series of caoutchouc rings or flanges (*f*), the use of which will be explained presently.—(See Plate IV., Fig. 3).

The advantages of this foot-piece are numerous and obvious. By attaching the foot to it any requisite position may be obtained, and then maintained by a turn of its pinching screw. This is of immense value in injuries of the leg and ankle. The motions of the ball and socket joint allow of any adaptation, and the pinching screw secures it. In fracture of the thigh it obviates eversion of the foot. In fracture of the fibula it can evert the lower fragment.

If we suppose the extending lacs to be attached to the limb, in whatever manner the surgeon may prefer, and the foot-piece brought into apposition with the sole of the foot, by sliding the horizontal bar through its standard (Plate IV., Fig. 3, *a*), the lacs are to be tied firmly at the back of the foot-piece, and now extension will be effected by screwing up the winged nut, which draws the foot-piece towards itself with irresistible force.

Thus two important objects are obtained—a steady, gradual force of great power, and one acting in a direct line with the axis of the limb.

It will be observed, that by a simple revolution of the foot-piece on the ball and socket joint the long splint may be applied indifferently to either the inner or outer side of the leg.

Having obtained a powerful extending force, acting “in directum,” it remained to render this force persistent and self-adapting, so as to combine, if possible, the action of the weight and pulley with the advantages already gained.

This has been effected in the following manner:—

When tension is applied by so screwing the winged nut as to draw downwards the foot-piece, the caoutchouc flanges, which lie between it and the standard (and to which attention has been already drawn), become compressed, and by their elasticity exercise a constant strain on the extending lacs, which can be modified by increasing or relaxing

the pressure. Thus the antagonizing action of the muscles may be wearied out. The more they contract the greater the strain on the lacs, while the tension continues, in modified degree, in proportion as they yield and relax, and thus the action of the weight and pulley is emulated; and if the attachments of either extending or counter-extending agents should yield or slip, the resiliency of the caoutchouc will compensate for the derangement, and still keep up an equable tension.

Such are the paramount and essential features of the apparatus. Some points of detail remain to be noticed and explained.

The reason that the horizontal bar is square is, to ensure steadiness when it is desired to fix the foot in any peculiar attitude, by tightening the pinching screw of the ball and socket joint; were it round, the foot-piece could revolve, when it was desirable to have it fixed and steady. The thread of the screw which the winged nut traverses is traced only on its corners, but will be found as unerring and effective as if the circle were complete.

The persistent tension of the weight and pulley might be simulated by elastic lacs, secured to the foot-piece, but with this great disadvantage, that when the lacs yielded the foot would be drawn away from the foot-piece, and would be free to take wrong positions. It is of manifest importance to keep the foot in close apposition with the foot-piece by a slipper, bandage, or adhesive straps, so that when any peculiar position has been attained, deviation from it may be obviated. In order to ensure this it was necessary so to arrange the elastic force that, while it yielded to any extraordinary tension, the foot should not become in the least separated from the foot-piece, and its requisite attitude should be still perfectly maintained. This has been accomplished by interposing the elastic medium between the extending agent (the winged nut) and the fulcrum against which it works (the standard attached to the long splint). (Plate IV., Fig. 1, *b*.)

But as cases will occur which cannot be treated in the extended position, such as those previously alluded to, arrangements have been made so as to allow of converting this splint, on emergency, into a double inclined plane.

A large oval fenestrum may be noticed about the middle of the long splint. This allows of the splint being kept in close apposition with the thigh, so as to avoid encroaching on the scrotum or vulva, without pressing against, or hurting the knee, opposite to which this vacancy has been purposely constructed. It will be also

observed that, at the centre of this oval the splint is hinged, so as to allow of its being doubled together on the outer side. This not only makes the entire more portable, but allows of its being converted, at any moment, into a double inclined plane, the inclination of which can be easily regulated by pillows or cushions. The foot-piece now revolves to a suitable position, perpendicular to the plane of the leg-piece, instead of being parallel to it as before, while a second oval has been removed, to secure the heel from any contact or pressure. Thus, in case of emergency, a double inclined plane can be readily extemporised.

When it is desired to keep the long splint straight, for the purposes of extension, the yielding of the hinge can be effectually prevented by inserting a pad of adequate thickness between the knee and the site of the hinge, which will prevent the bending of the splint, whether it be on the inner or outer side of the thigh.

The revolving foot-piece will be found of great advantage in other cases beside those where an extending power is required. In accidents and injuries of the leg and disease of the ankle, where it may be of importance to secure some special position of the foot, it will be found most useful. Here it is to be kept in apposition with the sole of the foot by means of a second pinching screw, whose office is to prevent the square bar from sliding in the standard, and so to keep the foot-piece permanently in contact with the foot, which now derives support from it. If it be desired to effect any peculiar position of the foot, the ball and socket joint enables the foot-piece to be adjusted at any fraction of an angle, and the foot having been previously secured suitably by adhesive strapping, the entire may be fixed in the required posture by a turn of the pinching screw (Plate IV., Fig. 3, *c*) which controls the ball and socket joint.

This foot-piece is equally useful for support or extension. It is applicable alike to long splint or inclined plane. It was exhibited by me at the Surgical Society some twenty years ago, since which time it has been amply tested in hospital and private practice. It has been found to possess great advantages in a variety of cases. Where some special position of the foot is required it can exercise either extension or support, as may be most desirable. In the case of fractured fibula it can fulfil the purposes of Dupuytren's splint. For the purpose of direct extension, it has proved more effective than any means hitherto proposed.

With respect to the best method of applying extension in the

case of fractured thigh, it may not be amiss to say a few words. It can be applied, as is so frequently done, above and close to the ankle, by means of the familiar clovehitch tie. Here it is apt to excoriate and cause pain by its pressure on the malleoli. A great advantage will be gained by attaching the extending agent near the knee; this may be accomplished by broad adhesive straps, applied after the method followed by Dr. Sayer in his treatment of hip disease. By this means double points of attachment may be effected by which a double advantage will accrue. Thus one attachment may be arranged above, the other just below the knee, and by using these alternately the patient obtains great relief. It will be found that the irritability of the femoral muscles will be lessened by applying the extending power high up. When practicable, it is well to attach it above the knee, and relieve the ligaments of the knee from strain, but in any case it can be attached, with advantage, above the calf of the leg.

A decided advantage will also be obtained from the use of short secondary splints, embracing the femur alone. Of these, one in front and one on either side will be sufficient. They may be secured by broad straps and buckles, and their equable pressure tends to soothe the spasmodic irritability of the femoral muscles. Their use was much insisted on by the late Sir Philip Crampton, at the Meath Hospital, and they have been justly recommended by other eminent authorities.

When counter-extension is made against the ramus of the pubes, and the long splint applied to the inner side of the leg, it serves as the inner splint, while the leather splint, with stud affixed, is available as the outer one. The straps and buckles may now embrace all, and by including the long splint will keep it close to the thigh, and prevent any encroachment on the scrotum or vulva.

When counter-extension is effected by the button on the outer side of thigh it will not be so convenient to include the long splint in the straps which confine the short ones. The comfort enjoyed by the patient when this method of counter-extension is used is very great. It can be best appreciated by applying extension on the inner side first, and then changing to the outer side. It is fully as effective as any other method, and presents no interference whatever with the use of the bed-pan; thereby contributing materially to the convenience and comfort of the patient.

It would not be right to conclude these observations without acknowledging my obligations to the ingenuity of Dr. Sayer,

of the Bell Vue Hospital, New York, from whose method of affixing his apparatus for hip and knee disease I took the idea of attaching a fulcrum (Plate IV., Fig. 1, c) on the outer side of the thigh, a measure which conduces vastly to the comfort of the patient. The mode of applying counter-extension by broad adhesive straps, applied above and laterally, to the calf of the leg, and to which the name of "Pancoast's Stirrup" has since been given, was adopted by me previous to 1850, and referred to in my publication "On the Weight and Pulley," about that time.

I now submit this mode of treating disease and injury of the lower extremity with all deference to the judgment of an impartial profession.

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ART. VIII.—*On Tapping in Hepatic Ascites.* By JOHN M'CREA, M.A., M.D., Senior Medical Officer to the Belfast Dispensary.

A DISCUSSION at the Medical Society of the College of Physicians some months ago directed attention to the diversity of opinion that exists on the value of tapping in hepatic ascites. Recent authors, also, appear to be divided in their views on this subject. Murchison considers the operation a *dernier ressort*, while Habershon and Ward recommend early tapping.

The two following cases (besides presenting other interesting features) have this in common, that in both the operation was performed, and in both the results were favourable.

CASE I.—A child, aged three years, was brought to the Belfast Dispensary on December 2, 1872. He was rachitic, and belonged to a very rachitic family. He had been sickly for the greater part of the preceding summer, having lost appetite and become emaciated. When I saw him, the abdomen was distended with fluid; the urine was scanty, and free from albumen; the bowels were regular. On the next day I drew off, by tapping, two quarts of fluid. The liver could now be palpated with facility. It was very much and uniformly enlarged, firm, inelastic, smooth, and not tender. The edge was rounded and free from indentation. After the operation he was ordered a mixture containing iodide of potassium and sweet spirit of nitre guarded by a little carbonate of potash. This he took for three days without perceptible effect, and the fluid was again accumulating. I then prescribed for him eight grains of sal ammoniac



every three hours. On December 23rd I drew away three pints of fluid. Shortly before the operation I ascertained that the medicine had not been regularly taken, owing to its unpleasant taste. We found, however, that he took it easily when well diluted. The first few doses had a most marked effect in increasing the quantity of urine. The fluid ceased to form in the peritoneum, and the liver progressively lost bulk. On January 13th the sal ammoniac was dissolved in an iron and chlorate of potash mixture, which was continued for two months. There is now no ascites; the liver appears to be normal; the general health is good; the appetite, before wretched, is now excellent; the face is plump, and the cheeks are rosy. All through the case the hygienic surroundings were bad.

In other respects, besides treatment, this case is interesting. Trousseau (Syd. Soc. Ed. of Lect., Vol. v., p. 56) says of rachitic children:—"Sometimes there is dulness in the lower and lateral parts of the abdomen. This dulness occurs along with fluctuation, and reveals a certain amount of effusion into the peritoneum. Cases of this kind are rare, and a great amount of ascites is never met with. This is a fact which was noticed by Glisson, by whom none of the symptoms of the disease seem to have been overlooked."

And in the next paragraph he points out that real hypertrophy of the liver is an exceptional occurrence in rickets, many of the cases of so-called hypertrophy being merely displacements of the organ downwards. As to the hypertrophy, however, some eminent authorities are against him. Glisson is quoted by Frerichs (Syd. Soc. Ed. of Frerichs on the Liver, Vol. ii., p. 175), as having long ago observed, "*Hepar in rachitide laborantibus prægrande est.*" In the same place Bianchi and Portal are given as authorities for a similar statement.

What is the exact nature of the liver affection in rickets? Rokitansky speaks of it as lardaceous. Frerichs says that he has seen rickets complicated with waxy liver only once, but with fatty liver frequently. The characteristics described above, as existing in my patient, were not those of fatty liver. Tanner (Diseases of Infancy and Childhood, p. 300), says that the enlargement is due to an albuminous or amyloid material. Dickinson, in a paper published in vol. lii. of the Medico-Chirurgical Transactions, says that the enlargement of the viscera in rickets is due to a deposit different from amyloid degeneration, and that it bears some analogy to the affection of the bones.

I am not aware that sal ammoniac has been hitherto used for rachitic liver. In amyloid liver, Budd tried it successfully, and recommended its use, while Frerichs objected to it and other neutral salts, on the ground of their tendency to start an exhausting diarrhoea and aggravate the cachexia. It is possible to form a plausible theory of its utility if we bear in mind that in contact with an alkaline fluid like blood it will generate free ammonia, and that this will pass through the liver, on which it will exercise its solvent properties before being diluted with the whole mass of the blood. This theory would apply especially to the removal of amyloid deposit, a material which Friedrich and Biermer have shown to be closely related to fibrine; for we have the authority of Richardson (see a paper read before the Med. Soc. of London, November, 11, 1872), for believing that deposited fibrine may be removed by the action of ammonia.

This case also illustrates the diuretic properties of sal ammoniac, which I think are not so generally appreciated as they ought to be. Böcker (quoted in Parkes on the Urine) has shown that it increases all the constituents of the urine. I lately saw its diuretic action powerfully displayed in another case of ascites from enlarged liver in a rachitic child. A large accumulation of fluid was removed in a fortnight, although the medicine was most irregularly administered. The irregularity of administration, however, gave me an opportunity of putting beyond all doubt its diuretic effects on my patient. In this last-mentioned case I cannot appreciate much change in the liver, but I have it still under observation.

CASE II.—A man, aged thirty-five, came to me in May, 1870. There was nothing important in his history. He was slightly jaundiced, and had ascites. His liver was large, firm, tender, and with a regular surface; it was frequently the seat of a dull pain. The urine was scanty, but not otherwise unhealthy. He had a tendency to slight purpuric attacks, which turned up every now and then. Diuretics and purgatives failed to make any impression upon the ascites. We found, however, that broom, digitalis, and iodide of potassium slightly increased the quantity of urine, and that quinine and iron had a good effect on his general health. He lived at the sea-side, and was most carefully nursed. He had a generous diet, with a moderate allowance of sherry. After a progress which I need not detail, the legs and the lower and posterior parts of the lungs became œdematous. On July 13 I drew away by tapping

twenty-seven pints of fluid. The operation was repeated in a fortnight. We finally settled down to a weekly operation. There was one exception to this. At a period when he was free from purpura, I prescribed a pill, containing blue pill, digitalis, and squill. The period for tapping was shortened from seven to five days. After this the weekly operation sufficed. The period for operation was determined by the state of the lower limbs and kidneys. I never waited for distressed breathing to occur. When the lower limbs, which, of course, diminished in size after each operation, re-filled as far as the thighs, or where an abrupt diminution of urine occurred, I tapped. The last operation was in the latter part of October. Fifteen operations were performed, and quantities of fluid varying from twenty to twenty-seven pints were drawn off at each operation. When the abdomen was emptied on the last three occasions I observed that the liver was markedly increasing in size. After the fifteenth operation the fluid somewhat abruptly ceased to accumulate. A small quantity was poured out, and remained perceptible for months—even, indeed, after the general health had been restored. The œdema disappeared, and the left lung, which had been dull on percussion from the clavicle to the nipple, cleared up. My patient now, after a lapse of two and a-half years, is robust and energetic, and has digestive powers beyond the common, no food coming amiss to him. The only drawback is that his liver remains large; but as a marked accession of bulk was nearly contemporaneous with improvement, I am the less uneasy on this account.

The following advantages may be claimed for early tapping in hepatic ascites:—

1. It relieves intra-portal pressure. The backward pressure generated in the portal system by hepatic obstruction seeks vent in various directions. In one man diarrhœa, in another bleeding piles, and in another an ulcerated leg relieves the liver. It is unfortunate if the *vis medicatrix naturæ* makes a therapeutical error, and causes a hæmatemesis. It is not quite so bad if the peritoneum is the safety valve. Tapping unweights this valve, and relieves intra-portal pressure.

2. The removal of the pressure which the effusion exercises on the liver will facilitate the development of collateral circulation through the more healthy parts of the viscus.

3. The relief of the abdominal tension will make it easier for the vena cava, vena azygos, and parietal abdominal veins to establish a collateral circulation between the abdomen and the chest.

4. The removal of tension from the vena portæ and its branches will promote the absorption of remedies.

5. We clear away an impediment in the way of the digestion and absorption of nutriment, which must be seriously affected by abdominal distension.

6. We relieve the kidneys, and these organs are not slow to exhibit signs of relief by increased activity after each tapping.

7. In ordinary cirrhosis we relieve the liver of a pressure that is assisting the morbid processes, which produce contraction.

8. We keep relieved other important organs, the distress of which makes tapping, at least, an absolute necessity.

9. We avoid the danger of typhoid peritonitis, which sometimes attends late tapping.

The doctrine of delay is put by Murchison thus:—"When the ascites has embarrassed the breathing, and not till then, you must draw off the fluid by the operation of paracentesis. The tapping may have to be repeated, but the rule is always to delay it as long as possible, until, in fact, there is danger of the respiratory function becoming seriously interfered with by the pressure of the fluid." The reason which he gives is to avoid the great drain of albumen. And yet, he says, that the operation frequently causes the albumen to disappear from the urine. Surely this is considerable compensation. Besides, as I have already pointed out, the pressure of the fluid cuts off the supply of fresh albumen to the system, by interfering with assimilation. Frerichs puts the same argument for delay in a slightly different shape. He says that the pressure of the ascitic fluid on the vena portæ lessens the rapidity of effusion, and that by paracentesis we give up this advantage. If it be an advantage it is easy to retain it; a tight binder could be used throughout the intervals between the tapplings to keep up the pressure. But would this be judicious? It is noteworthy that in many of the cases recorded by Frerichs, the high pressure generated in the portal system broke out in the gastro-intestinal tract in a flux, which was the immediate cause of death.

In conclusion, the impression left on my mind, both by the cases above-mentioned and by others which were under my observation for short periods only, is, that we may hope for better results in liver dropsy by looking on tapping, not merely as a palliative, but even as a radical method of treatment.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Cooper's Dictionary of Practical Surgery and Encyclopædia of Surgical Science.* New Edition. Brought down to the present time. By SAMUEL A. LANE, Surgeon to St. Mary's, and Consulting Surgeon to the Lock, Hospitals: Lecturer on Surgery at St. Mary's Hospital. Assisted by various eminent Surgeons. In two volumes. London: 1861 and 1872.

IT is eleven years since the first volume of this, the eighth, edition of Samuel Cooper's Dictionary appeared. The editor has not, in our opinion, sufficiently followed the example of Cooper, who strictly maintained the bibliothecal character of his wonderful work—wonderful for its general accuracy, wonderful for its readability, and wonderful for its condensed literary material. The editor, considering the referential and encyclopædial requisites of a surgical dictionary, should not have allowed so many of the articles to be cramped by the prejudice, or, more probably, the laziness of some of those who were associated with him in his editorial duties.

It is a matter worthy of reflection, and with many would be considered to point to a decadence of the English surgical mind, that whereas Cooper, unaided, succeeded in producing seven editions of this Dictionary, each of which was *au courant* with the surgery of the date of its publication, it has taken one chief editor, and twenty-three assistant editors, to bring out this edition, some of the articles in which are imperfectly revised, and are by no means *au courant* with the surgery of the date of the publication of each volume.

After an unwarrantable interval of eleven years, a lapse of time which had greatly reduced the selling value of the first volume, the second volume has lately appeared. This, indeed, is but tardy justice to those who purchased the first volume—a volume now old, and which bears, to some extent at least, the same relation as the old husband does to the young wife in the picture named “Winter and Summer.”

To give a minute analysis of these volumes would require so much of our space, that we have had to confine ourselves to a few passing remarks on some of the articles.

The article "Abscess" is an improvement on that of former editions, still it is not so perfect as it should be. For instance, it is mentioned that abscesses of the liver, spleen, kidney, and lungs, peculiarly demand delay before attempting to open them, to allow, as Dupuytren inculcated, the skin to inflame, "the only circumstance which can be depended upon as denoting the formation of those adhesions by which alone the insinuation of the pus into the great serous cavities will be prevented." But no allusion whatever is made to the suggestion to attempt the induction of adhesive inflammation between the abdominal wall and the wall of deep abdominal abscess, such as hepatic abscess, before the knife is passed into it. In this way effusion of pus into the peritonæum may be avoided. The very old method of opening hepatic abscess with caustic potash probably had two objects—the production of this adhesive inflammation, and the discharge of the matter externally. In more recent times Graves attempted to gain the same object by making a preliminary incision over the abscess and nearly down to the peritonæum. Adhesive union might be thereby produced between the serous surfaces. After the expiration of a few days the abscess may open spontaneously through the wound, or it may either be opened by the knife of the surgeon or exhausted of its contents with Dieulafoy's aspirator.

The article "Amaurosis" is much improved. The observations on strychnia as a remedy for this disease accord with our experience of the therapeutic value of this drug. Having tried it endermically, hypodermically, and internally, we cannot bring to our mind any convincing evidence in favour of its efficacy. This, as is stated in the article, is likewise the opinion of Tyrrell, Lawrence, Mackenzie, and Dixon.

The greater number of the modes of amputating are sufficiently fully described, and the relative value of the circular and flap methods impartially given. The unprejudiced surgeon will, however, agree with the editor, that "no judicious surgeon should commit himself to an exclusive preference for either one or the other method: it is his duty to acquaint himself thoroughly with the most approved methods of performing both, and to adopt whichever may appear to be best suited to the circumstances of each particular case."

The long interval of time that has elapsed between the publication of these volumes is made very patent by the absence of allusion in this article to either acupressure, torsion, or the use of *presse-artères*, as hæmostatics after amputation, as well as by the absence of any mention of the antiseptic management of stumps.

The editor, in his observations on Pirogoff's modification of Syme's amputation at the ankle, states, on the authority of Fergusson, that Pirogoff is "said now to have abandoned it in favour of the ordinary amputation at the ankle." Curious to say, within the last few years, evidence in favour of Pirogoff's amputation has been published in some of our periodicals. Permanent cure is stated therein to have followed upon the operation. For our part, having seen the portion of os calcis left in the operation become subsequently carious, so as to necessitate a second amputation, we think the principle inculcated by Syme should not be overlooked, when there is a question between the two operations, that in Pirogoff's amputation a portion of bone is left behind, which is very liable to become diseased.

The remarks upon amputation, through the knee-joint and the femoral condyles, will be read with much interest, these operations having been more or less practised both in America and the United Kingdom within the last few years. In civil practice we do not often meet with cases for which the amputation through the condyles is suitable. At all events, whichever of these operations is selected for performance, the chief covering should be taken from the front of the limb. When this is done, the cicatrix, as the editor reminds us, is removed to a position where it will not suffer irritation from pressure. For this reason, the long anterior flap operation must be superior to Hoin's long posterior flap operation, revived in these countries by Syme, in his operation through the femoral condyles, in which the posterior flap is liable to draw the cicatrix beneath the end of the femur.

The editor seems to think that when the end of the femur is sawn through, the operation by long posterior flap may, perhaps, be found the best; the thick muscular cushion thus obtained will be less likely to suffer injury from the sharp edges of the sawn bone than an anterior flap, which must necessarily be composed of integument only. This may be obviated by a judicious rounding of the bone with Butcher's saw, or by applying the patella to the cut end of the femur, as recommended by Seymanowski, in his supra-

condyloid amputation.\* Moreover, it should be recollected that these muscular cushions ultimately waste, and, further, that good surgical mechanicians do not, as a rule, take their bearings for artificial limbs from the extreme ends of stumps.

Surgeons who ignore the sound practical precept, to amputate as far from the trunk as possible, will not, most likely, follow the recommendation of the editor to do so in these amputations, the greater leverage thus obtained no doubt increasing the power of the stump over the movements of an artificial limb. When the artificial limb has not a joint, the long lever, no doubt, is a great advantage; but, when there is an artificial knee to the artificial limb, then, in the case of the long thigh stump, the knee must necessarily be placed below the level of the opposite knee, which in the male subject would not fail to attract attention during movements, or during the sitting posture. With women this would be of little moment.

As to the advisability to amputate at the hip for malignant disease, we think, with the *Lancet*, quoted by the editor, that the immediate risk to life incurred by this hazardous operation is not warranted, the chances of recurrence of the disease being so great. It is different, however, as regards amputation for scrofulous disease implicating so much of the femur as to contra-indicate excision. In these cases, in the young subject particularly, the operation should be preferred to certain death from the effects of the disease, poor though its chances of success may be. The editor has overlooked a not unusual after-result of the operation, namely, abscess either in the sheath, or along the course of, the psoas muscle.

When we reflect upon the vast number of surgical writers of the present day, it seems remarkable that the editor should have to express his regret "that sufficient data do not exist for estimating the mortality in the upper as compared with the lower third of the thigh, and of the upper with the lower third of the leg."

The mortality from the inhalation of chloroform vapour, as an anæsthetic, having been brought prominently before the public, within the last few months, leads us to the question—why have surgeons persisted in the use of pure chloroform, when they have, in the mixture of chloroform and spirit of wine, a comparatively safe anæsthetic, which Snow long ago pointed out? We can only

\* *Vide* the number of this Journal for November, 1871.



attribute this foolhardiness to a want of information upon the subject, the deaths from chloroform having been sufficiently numerous to warn us of its great danger. The chloroform and spirit mixture is slow in producing anæsthesia, but this may be one of its sources of safety; a rapidly produced chloroform narcosis, if we may judge by many of the fatal cases recorded, being attended with the greatest danger. Costly inhalers are not necessary when the diluted chloroform is used, which may be administered with a piece of lint, a handkerchief, or a Skinner's apparatus. The object of administering pure chloroform with an inhaler, such as Snow's inhaler, is to prevent the air, as far as possible, from containing more than six per cent. of the vapour. Whereas, when the chloroform is mixed with spirit, the latter, according to Snow (the editor of the article on Anæsthesia), prevents the air from taking up more than about this quantity. Hence, the safety of the mixture.

Dr. Snow speaks very favourably of the safety of sulphuric ether for producing anæsthesia, and mentions that this agent is altogether incapable of causing sudden accidents, such as those which have happened in the employment of chloroform. At the time these observations of his were published, only two deaths were known to have occurred from the inhalation of ether. They both took place in France. It is remarkable that Snow, who thus speaks so favourably of the safety of ether, was nevertheless compelled, by the fashion of the period at which he wrote, to confine himself mostly to the use of chloroform.

Four fatal cases from ether inhalation have occurred recently in America, where, however, it is stated that ether is more or less recklessly administered; these results should, therefore, be scarcely used as an argument against this anæsthetic.

It is evident, from some recent writing on anæsthetics, that even in America surgeons differ as to the relative safety of ether and chloroform for producing anæsthesia. Thus, Dr. Henry Hartshorne mentions, in the recent edition of his work on the *Essentials of Practical Medicine*, that observation on the use of chloroform, in a method employed by some of the surgeons of the United States army during the war, has modified his previous apprehension of it.

The ether spray producer had not come into use when this article on anæsthetics was penned, and, therefore, is not mentioned in it.

In the observations on the treatment of aneurism by compression, in the article "Aneurism," allusion is made to the different modes

of applying the pressure to the sac, or the vessel leading to it. Amongst these, Deschamp's plan of exposing the vessel and applying his "*presse artère*" to it, is included, and classed by the editor with the other barbarous methods in vogue, in those days, for the treatment of aneurism by compression.\*

Although Pelletan, Dubois, Blizard, and Freer, attempted to cure aneurism by pressure on the artery leading to the sac, the merit, as the article mentions, "of having introduced the practice of compression in the treatment of aneurism into modern surgery, of having given it a definite place in our art, and of having established the true principles on which it acts, incontestably belongs to the Dublin surgeons; amongst whom the names of Hutton, Bellingham, Tufnell, and Carte, deserve especial mention." It is to the Dublin surgeons we are indebted for the lesson that "no amount of compression is exercised beyond what is requisite to restrain and moderate the flow of blood into the sac," and that no attempt should ever be made "to compress the artery so severely as to lead to its obliteration by inflammation."

Though the cure is effected by the deposit of laminated fibrine, in the form of active clots, as they have been called, the editor thinks that this should apply only to "the common sacculated form of the disease." In the far less common tubular variety in the lower extremities, "the cure of the aneurism takes place by contraction of the sac, and by its becoming filled with fibrine in a somewhat irregular manner," of which mode of cure there is an illustration in the museum of University College, London.

In the article we find "Signorini," written for Signoroni, whose tourniquet was among the first to be used in the compression treatment of aneurism.

As to the relative tediousness of the ligature and of compression, it is found, as the editor shows, that there is but little difference under the two plans; for although some cases in which compression is used are prolonged over a considerable space of time, yet they do not occupy more than is often consumed when accidents of various kinds follow the use of the ligature; and it not unfrequently happens in compression, what can never occur after the employment of the ligature, that the patient is cured of his disease in a few hours or days." An analysis of the cases of ligature, recorded by Crisp, will show that the time occupied by this treat-

\* For an illustration of Deschamp's *presse-artère* see the number of this journal for November, 1869.

ment, and that by compression, averages about the same. Moreover, the mortality from compression treatment is only about in the rate of "1 to 16," whereas, under the use of the ligature it is in the proportion of "1 to 4," showing a considerable preponderance of recoveries in favour of compression. "Besides which, in many patients who recovered after the ligature, various accidents, such as gangrene, erysipelas, secondary hæmorrhage, &c., resulted as the direct consequences of the treatment, and these do not happen when pressure is employed." Again, after compression fails, "the ligature may then often be advantageously applied; and, as has been proved by the known cases, with a better success than if compression had not previously been tried, that treatment having caused the collateral circulation to enlarge, and thus lessened the tendency to gangrene."

Although we have not much confidence in the internal treatment of aneurism with iodide of potassium, lately so highly recommended for this disease, it might be tested, in compression cases particularly, to ascertain if its use shortens the average period of cure.

Temporary immediate compression, by means of *presse-artères*, of arteries leading to aneurismal sacs, has been tried with anything but satisfactory results. This may have been owing to the description of instrument used, some of these instruments being, from their construction, calculated to disturb the vessel and its connexions, during both their application and removal.

The editor is of opinion, and with this opinion many surgeons will probably agree, that the ligature of the subclavian artery, on the inner side of the scalenus muscle, should be banished from surgical practice, and that few prudent surgeons "would again venture on performing" ligature of the *arteria innominata*.

The editor, of course, could not have been aware, at the period of the publication of the first volume, owing to the recent date of the operation, that sub-cutaneous division of the neck of the femur for the removal of deformity of the lower limb, caused by ankylosis at the hip, had been since performed with most satisfactory results by Mr. Wm. Adams, of London. In fact the editor has expunged from this volume the description of Dr. Rhea Barton's operation on the hip-joint for the cure of ankylosis, because of the condemnation of the operation by Cooper, Sanson, and Cloquet. We apprehend that Adams's instructive case will have to appear in the next edition of this work. Mr. Adams, by-the-by, is the reviser of the article on Orthopædic Surgery.

Although a great deal can be done for remedying deformity resulting from ankylosis, we believe, on the whole, that gentleness is the best policy in dealing with these cases, and that few surgeons of the present day will have recourse to the rough methods of Louvrier, Dieffenbach, Palasciano, and Langenbeck, which were often followed by serious results. We have known a person to succumb in about twenty-four hours after forcible extension of the knee to overcome bony ankylosis of this joint.

There are some new practical observations in the article "Anus." The opening of all abscesses about the anus, immediately the matter is formed, is very properly urged as affording the best chance of preventing the formation of a fistula. In the article it is recommended that a piece of lint should be inserted between the lips of the incision, to prevent their too rapid union. Whenever it is practicable we prefer the use of a short length of drainage tubing, which allows a freer exit for the matter than a dossil of lint would do, which has the effect of confining matter for hours in the abscess sac. A refutation will be found in this article of the dogmatism of Sir Benjamin Brodie and Mr. Syme, regarding the presence of an internal opening in every case of fistula in ano, Sir Benjamin believing in the presence of an internal opening in every case of fistula in ano—in other words, that it precedes suppuration; Mr. Syme, that it always follows suppuration. Cases of fistula in ano are occasionally met with, especially when the disease is not of long standing, in which no internal orifice can be discovered after the most careful search. Moreover, preparations, as Mr. Curling remarks, may be met with in museums, which prove beyond all doubt that such a state of things is occasionally found. The probe alone should not be depended upon when there is a doubt concerning the existence of an internal opening. Water, for instance, if injected up the sinus, may make its way into the rectum when the probe fails to do so, and will thus demonstrate the existence of a communication.

We join the editor in the apprehension that few English surgeons will agree with Nélaton that forcible dilatation of the sphincter muscle, as practised by many French surgeons, is the best mode of treating fissure of the anus. Trousseau, we may state, was very partial to the application of preparations of rhatany to the fissured anus. It might be well to remember this drug when treating people for anal fissure who object to operative procedure, although we think but little dependence should be placed upon it.

Dr. Marshall Hall's method of practising artificial respiration we find mentioned in the article on asphyxia, but the first volume having been published so many years ago, Sylvester's more recent method for the same object does not appear in this article.

In the article "Bladder," we fail to find any allusion to Brandor's and Voilemier's methods of tapping the bladder.

The editor of the article on "Burns" very properly mentions that the most recent experience has modified the conclusions in favour of amputation when a limb has been destroyed by a burn, "inasmuch as there seems to be danger of pyæmia from cutting near parts injured either by extreme heat or extreme cold—and the practical rule seems to be established, that both in cases of burns and frost-bite, if the period for primary amputation have passed over, it is advisable only to remove such portions of projecting bone as can be done without division of soft parts, and leave the separation of the latter to the process of sloughing, granulation, and cicatrisation, while the constitutional and local treatment is being carried out on the principles above inculcated." He does not mention sudden death as one of the remote results of burn, when, for example, the healing process has somewhat advanced. Embolism may have something to do with this accident. At all events, cases of the kind having been published, they should have been noticed in this article.

Every sound surgeon will, we have little doubt, agree with the editor as to the advisability of using caution before opening an enlarged carpal bursa. This cannot be done, in many cases at least, without the risk of causing considerable constitutional disturbance, or of imperilling the limb, or even the life of the patient. In corroboration of this opinion we shall here give the particulars of a case that came under our observation. A consultation was held to discuss the propriety of opening an enlarged great carpal bursa in a woman. Being advanced in life, and as the bursa did not cause her much, if any, inconvenience, it was decided not to open it. Dissatisfied with this decision, she sought for other advice, and was not seen again by her original advisers for a few years. On this occasion, however, she had but one hand. When questioned about the absence of the other, she replied that, not being satisfied with the advice originally given to her, she sought for other opinions. The result was, the opening of the bursa, which was followed by sloughing, which, in its turn, necessitated amputation.

The article on "Cancer" has been greatly improved, the opinions of some of the most distinguished pathologists of the day having been incorporated with the text. Its histology has not been forgotten—the structure of its elements, as they appear under the best magnifying powers, being concisely described.

At the end of the article on "Anthrax," the peculiar views of M. Nélaton have been introduced. This distinguished surgeon, our readers may remember, considers the core of anthrax to be a false membrane, and not a slough of areolar tissue. He repeats this opinion in the new edition of his *Pathologie Chirurgicale*, now passing through the press. To us it appears strange that an observer, so accurate as M. Nélaton, should have overlooked the areolar tissue in the core of anthrax. When carefully sought for, both white and yellow elastic tissues will be found in its core. It was this false membrane theory of Nélaton that led to the systematic compression treatment of anthrax, the indiscriminate use of which we cannot recommend. There are anthraxes, no doubt, that will do very well under methodic pressure, but if anthrax is acute and very painful, we believe the time-honoured incision to be the best practice. The sub-cutaneous division might be first tried, and should it fail to arrest the disease, then the ordinary incision or incisions should be at once practised. We have repeatedly seen acute anthrax break new ground beyond the compressing straps, and then its further progress to be at once arrested by the knife.

With regard to Nélaton being the inventor of the furuncular false membrane theory, an oversight has been committed in this work. In fact it was originally applied to the core of boil by Gendrin, whose name does not appear in this article.

A connexion between diabetes and anthrax, to which attention was drawn by Prout, who considered that diabetes always accompanied carbuncles and malignant boils, or abscesses allied to carbuncles, is not in accordance with our observation. It is true, as Dr. Garrod states, that diabetics are liable to both boils and carbuncles; but we deny that carbuncle is necessarily accompanied by saccharine urine, unless the subjects of the anthrax were previously diabetic. It is curious that nearly every writer who alludes to the connexion of anthrax with diabetes, the editor of this dictionary not even excepted, should attribute the origin of the discovery of this supposed connexion to Prout, who, himself, does not put it forward as his own. Indeed, he states that it is a fact mentioned by several of the older writers, among whom he places Cheselden.

In the fifth edition of *Cheselden's Anatomy*, published in 1740, we find the following paragraph bearing upon the question:—

“There is sometimes a large kind of boyle or carbuncle in this membrane, which first makes a large slough, and a number of small holes through the skin, which in time mortifies and casts off, but the longer the slough is suffered to remain, the more it discharges, and the more advantage to the patient; at the latter end of which case the matter has a bloody tincture, and a bilious smell, exactly like what comes from ulcers in the liver; and both these cases are attended with sweet urine as in a diabetes.”

Were we not criticising a dictionary, we would not allude to this matter, but an oversight like this, in a work of reference, is unpardonable.

In the article on “Caries,” we find the views of Syme regarding rarefying caries. Syme, it is well-known, applied this term to that condition of the compact osseous tissue which resembles caries of cancellous tissue, and which is produced by the inflammatory process—expanding, softening, and separating the diseased tissue, causing it to resemble cancellous tissue in appearance. When thus prepared, the carious action proper commences. Stanley adopted this view of Syme's, and our own observation leads us to believe it to be correct.

In this article, also, there is a remark of Stanley upon deep caries that we have in numerous instances confirmed. Stanley observed that “in bones that are deeply seated, caries is often accompanied by very little evidence of inflammation, either in the bone or in its investing soft parts. Thus the scrofulous caries of the spine often advances to the destruction of the bodies of many vertebræ, without tenderness in the bones or in the soft parts investing them.”

The writer recently had under his observation five cases of angular curvature of the spine depending upon progressive disease of the spinal column. In none of these cases could he cause pain by percussing, with tolerably strong force, the projecting spinous processes. This absence of pain and tenderness in disease of the spinal column was very well exemplified in the following case:—

Several years ago there came under the writer's care, for the first time, a gentleman having a large psoas abscess. The spine was, for months, almost daily examined for both deformity and tenderness. At first there was no deformity, and on no occasion could pain be elicited in the spine by tolerably strong pressure made with the finger, or by percussion with the ear-piece of a heavy stethoscope.

After several months the abscess opened a little below Poupart's ligament and discharged a large quantity of whey-like fluid, with pus flakes. The sac eventually contracted and closed. The gentleman then returned to the country, and the writer did not see him again for many months, when the patient consulted him for difficulty in breathing. Examination of the chest revealed a large latent pleuritic effusion at the right side. In consultation with Dr. Stokes it was arranged that he should draw off the fluid from the pleural cavity in case its absorption did not soon commence. Absorption, however, did take place, and there was no necessity for paracentesis. During this illness the spine, tested for pain and tenderness, never afforded evidence of either. There was no deformity.

When the patient recovered sufficiently for travelling, he was allowed to return to the country. After the expiration of several months he again re-appeared at the writer's house, but on this occasion, with shortened stature and strongly marked angular dorsal curvature. The projecting spinous processes as well as the remainder of the spine were percussed, but without eliciting the slightest pain. Although short, this account applies to a period of several years. I regret to say that the patient has recently died (May, 1873) from the so-called uræmic poisoning, depending upon renal disease.

The article on "Caustics" contains many useful suggestions bearing upon the use of these agents, but the bichloride or perchloride of mercury pastilles have been overlooked by the editor. They were a favourite application of Sir Benjamin Brodie in the treatment of diseased lymphatic glands in the groin, and an account of their composition would have enhanced the usefulness of this article.

In the article on "Chlorosis," arterial murmurs seem to be confounded with venous murmurs. It is stated in it that "the diagnosis is sometimes aided by the existence of a *bruit de soufflet*, which may be either arterial or venous, or both." This observation implies that these sounds are identical, whereas one is an interrupted *bruit de soufflet*, and the other a continuous murmur, *bruit de diable*. The mistake is the more remarkable as one of the modes by which the *bruit de soufflet* may be differentiated from the *bruit de diable* is the application of intermittent pressure with the finger to the jugular vein, at the distal side of the bell of the stethoscope, when, if the murmur be venous, it ceases every time the vein is pressed. The venous murmur is usually so easy to diagnose that



this test is hardly necessary unless in the case of a coincidence of venous jugular murmur with carotid bruit.

In the brief account of cholæmia which has been introduced into this edition of the dictionary, because of the occasional connexion of jaundice with surgery, it should have been mentioned that when the secretory function of the liver is impaired, both leucine and tyrosine may be found in the urine, while at the same time there is an absence of the biliary acids. According to the investigations of Dr. Harley, of London, in jaundice from suppression of the biliary secretion, the biliary acids are not formed, the bile pigment only being present in the urine, whereas in jaundice from re-absorption of bile, it contains both the acids and pigment.

Circumcision is defined by the editor as "the operation for cutting off a circular piece of the prepuce." This is vague, and would lead the reader to suppose that circumcision is limited solely to the male subject. It is not, however, so restricted in its application, being extensively practised upon young females in Cairo, in the towns along the banks of the Nile, and in Nubia. Possibly in other places also. Some of the operators who practise in these places remove the clitoris, and others both clitoris and nymphæ.

A few years ago, our readers may remember, a great outcry was raised against the late Mr. Baker Brown for performing this operation upon adult females, one of the arguments of his adversaries being, that it was unphysiological, as so partial an amputation of the female erectile tissue could scarcely curb the venereal orgasm. Theoretically this, at first sight, would appear to be a valid argument. However, in the places we have mentioned, it is found that the operation may either impair or completely destroy the female sexual appetite in those who have been submitted to it.

In the article on dislocation, the peculiar results of Malgaigne's investigations, concerning the relative frequency of dislocations and fractures at different ages, are contrasted with the results of Sir Astley Cooper's experience. He, for example, considered that "old persons are less liable to dislocation than individuals of middle age." Malgaigne, on the other hand, thought quite the reverse, and remarks that, "beyond the age of 65, if due regard be paid to the population, the proportion of dislocations, instead of diminishing, becomes considerably *greater* than in adult age. Malgaigne also shows that beyond 60 years, the proportion of fractures, the comparison being made with reference to the population, *does not*

increase, but tends rather to diminish, and his investigations have led him to the unexpected result that the tendency to fractures, as compared with dislocations, is even less at old age than at other periods of life."

Our experience coincides with that of Sir Astley Cooper. Individual experience, however, would go but a short way in the decision of a question of this description.

"When a dislocation is complicated with fracture of the shaft of the dislocated bone, the difficulties in the treatment of the case are greatly increased, and the more so, in proportion as the fracture is situated near to the dislocation. In a complication such as this, Sir Astley Cooper advised that an endeavour should be made to reduce the dislocated bone without loss of time, taking care that the fractured part is strongly bandaged in splints, to prevent injury to the muscles; for, if the reduction be not accomplished at first, it cannot be afterwards attempted without danger of reproducing the fracture." Several cases, the editor mentions, "are recorded of dislocation of the shoulder complicated with fracture of the neck of the humerus where the head of the bone has been successfully replaced; of dislocations of the hip which have been reduced notwithstanding fracture of the shaft of the femur; of the elbow-joint with fracture of the radius and ulna. Occasionally, however, when immediate reduction could not be obtained, it has been successfully accomplished after the fracture had united." It appears to us that this paragraph would have been much more instructive if it contained a short account of the modes by which these cases had been successfully managed. A well-directed "manipulation," with the assistance of an anæsthetic, should be first tried in these embarrassing cases. Indeed, the ordinary dislocation of the shoulder might in some cases be reduced by properly-directed pressure of the head of the bone without the necessity of having recourse to traction of the broken shaft.

With regard to the relative frequency of dislocation into the axilla, or sub-glenoid dislocation, of which Sir Astley Cooper has said he had seen "a multitude of instances," there is much difference in opinion between French and English surgical writers. Malgaigne differs altogether with Sir Astley Cooper on this question. Indeed, at one time he went so far as to deny the existence of the luxation downwards, but he afterwards modified his opinion and considered this luxation as not being very rare. In his work on dislocations, he gives a dozen cases of the dislocation into the axilla

under the name of sub-glenoid dislocation. The fact we believe to be, that both Sir Astley Cooper and Malgaigne confounded the dislocation downwards with the dislocation inwards. Sir Astley Cooper described both these dislocations as dislocations downwards or into the axilla, and Malgaigne called them sub-coracoid and intra-coracoid dislocations. Nélaton tells us, however, that Malgaigne recognized his error and eventually admitted the sub-glenoid dislocation, but reserved the name of sub-coracoid luxation for the luxation in which the head of the humerus is placed precisely below the coracoid process.

The editor does not allude to the peculiarities connected with the length of the arm in the sub-coracoid dislocation. The arm, in fact, in this dislocation, may be either lengthened, shortened, or may retain its normal length, and although theories have been advanced to explain these differences, none of them is satisfactory.

The editor is silent on the dispute concerning the condition of shoulder, to which the term "partial dislocation upwards of the humerus" has been applied. This supposed partial dislocation upwards has been found combined with either displacement of the long tendon of the biceps, or its destruction between the glenoid attachment and the bicipital groove, where it is usually found adherent.

The case of supposed partial dislocation of the humerus upwards, upon which those who are unacquainted with the changes produced in the shoulder-joint by chronic rheumatic action, pin their faith as an accomplished fact, was recorded by Mr. John Soden, of Bath, in the year 1841. None, however, of the conditions of the joint found in that case are incompatible with the opinion that they were the results of rheumatic action following a severe contusion, rather than of dislocation.

At the meeting of the British Association, held in the year 1836, and in Todd's Encyclopædia of Anatomy and Physiology, published in 1849, Mr. Adams (of Dublin) proved, at least to the unprejudiced mind, that Sir Astley Cooper's "*partial luxation of the shoulder-joint forwards and inwards,*" was in reality the effect of chronic rheumatic arthritis, and not a luxation from accident. Indeed, in the 15th volume of this Journal, Mr. Robert W. Smith published, in 1853, a paper confirmatory of Mr. Adams's opinion as to the rheumatic nature of this supposed dislocation. There can scarcely be a second opinion that Mr. Adams is perfectly accurate in the observation recorded by him in his work on "Rheumatic Gout," that

the partial displacement upwards of the head of the humerus, as the immediate result of accident, has not been proved by Mr. Soden. It may be stated, in corroboration of Mr. Adams's view, that the subject of this supposed dislocation, according to Mr. Soden himself, was of rheumatic habit.

In one of the following parallel columns are given the symptoms of this supposed dislocation, as relied upon by Mr. Soden as proof of this condition of shoulder being a luxation; and in the other column will be found the symptoms of, and changes produced by, chronic rheumatic arthritis of the shoulder-joint, which will enable the reader to satisfy his mind regarding the true nature of this imaginary luxation:—

*Symptoms and pathological appearances observed by Mr. SODEN in his case.*

1. When swelling had subsided the head of the bone looked as if it were drawn up higher than it should be, and unduly prominent in front.

2. A crepitating sensation was produced on moving the limb.

3. Abduction difficult. Undermovements, backwards and forwards, easy.

4. After death, six months after the accident, the long head of the biceps was found dislocated from its groove, and lying on the lesser tuberosity of the humerus.

5. The capsule was slightly ruptured.

*Chronic rheumatic arthritis of the shoulder-joint.*

1. Elevation and advancement of the head of the humerus, which may be enlarged.

2. A crepitating sensation when the limb is moved.

3. Abduction difficult. Undermovements easy.

4. In chronic rheumatic arthritis it is by no means necessary that the upper portion of the biceps' tendon should be absent.

5. The capsular ligament may be deficient superiorly, which condition has been mistaken for rupture.

The editor appears to consider that a case recorded by Mr. Alfred Smee was likewise a case of partial dislocation upwards. Mr. Smee's case, he informs us, differed from Mr. Soden's "in being accompanied by rupture instead of displacement of the long head of the biceps. The ruptured end adhered firmly to the bicipital end." Now, in chronic rheumatic arthritis, both Mr. Adams and Mr. R. W. Smith have shown that the whole of the intra-articular portion of the tendon may be removed, and that the

remainder of this tendon, external to the capsule, will be found adherent to the summit and edges of the bicipital groove.

The editor endeavours to support his view of the nature of Messrs. Soden's and Smee's cases by a reference to a communication, styled "Pathological Appearances of Seven Cases of Injury to the Shoulder-joint," recorded in the *London Medical Gazette*, by Mr. J. Gregory Smith. It happens, however, that Mr. Edwin Canton, as mentioned by Mr. Adams in his "Notes on the Morbid Anatomy of Chronic Rheumatic Arthritis," wrote to Mr. Gregory Smith, asking him—"Whether, from subsequent experience, he had found reason to alter his opinion regarding the origin of the morbid phenomena?"

Mr. Gregory Smith, to his honour, replied:—"I was, in the first instance, disposed to view these appearances as purely the result of injury, but the frequency of their occurrence, and the similarity, to a greater or less extent, of the apparent mischief, induced me afterwards to come to a different conclusion, and to view them rather as the destructive results of long-continued chronic inflammation of the fibrous tissues."

There are many other changes that result in the shoulder from this peculiar disease, and that might easily lead the unwary to consider the result of accident; but as they are not mentioned in the cases to which we have referred, we must pass them by in silence.

In the description of the dislocation of the first phalanx of the thumb forwards, which is so much more rare than its luxation backwards, no allusion is made to Mr. Hey's observation about it, and yet this surgeon expressly states that the first-mentioned dislocation is easily reduced. Hey's name, however, is connected by the editor with the most common, but most difficult of these dislocations, to reduce the dislocation of the first phalanx backward, or of the end of the metacarpal bone forward, towards the palm.

The history of the reduction of the hip by manipulation is given so imperfectly by the editor, that it is almost useless, referentially speaking, at least. Thus we are told that Pouteau and Dezprey, and some subsequent writers, were the chief initiators of this practice. Reduction by manipulation, however, as F. H. Hamilton mentions, "dates from the earliest records of our science," Hippocrates having left on record that "in some the thigh is reduced with no preparation, with slight extension directed by the hands, and with slight movement; and in some the reduction is

effected by bending the limb at the joint, and making rotation." The editor of a London-published Surgical Dictionary should not have overlooked the fact that Wiseman, in 1696, wrote as follows on this practice:—"If the Thigh-bone be luxated inwards, and the Patient young and of a tender Constitution, it may be reduced by the Hand of the Chirurgeon, viz., he must lay one Hand upon the Thigh, and the other on the Patient's Leg, and having somewhat extended it toward the sound Leg, he must suddenly force the Knee up toward the Belly, and press back the Head of the *Femur* into its *Acetabulum*, and it will snap in."

(*To be continued.*)

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*The Practice of Surgery.* A Manual. By THOMAS BRYANT, F.R.C.S., Surgeon to Guy's Hospital. With five hundred and seven illustrations. London: J. & A. Churchill, New Burlington-street. 1872. Pp. 1,088.

It is to be remembered, says the author of the work before us, in his Preface, that this work is a manual of the practice of surgery; it deals only with essentials and principles; it is not intended to compete with such valuable works as Paget's "Surgical Pathology" and Holmes' "System." To these the student may refer when more detail is wanted.

It is reasonable that those who venture to criticise Mr. Bryant's book should bear these words in mind. Yet we fear that some of those who have anticipated us in performing this duty (which we regret having been unavoidably prevented from fulfilling at an earlier date) have forgotten, or overlooked them.

As a manual of the practice of surgery for the use of the student, we do not hesitate to pronounce Mr. Bryant's book a first-rate work. We have no personal knowledge of Mr. Bryant; we confess to have had some prejudice excited, not favourable to the author, by some criticisms which met our eye; we are by no means blind to certain blemishes of style, negligences, and careless expressions dwelt on, as we think, with uncalled-for severity by some who seem to have undervalued the real merits of the work; yet, withal, we adhere to the opinion, that for the student the work is a first-rate one.

Mr. Bryant has a good deal of the dogmatic energy which goes

with the clear, pronounced opinions of a man whose reflections and experience have moulded a character not wanting in firmness and decision. At the same time he teaches with the enthusiasm of one who has faith in his teaching; he speaks as one having authority, and herein lies the charm and excellence of his work. He states the opinions of others freely and fairly, yet it is no mere compilation. The book combines much of the merit of the manual with the merit of the monograph. One may recognize in almost every chapter of the ninety-four of which the work is made up the acuteness of a surgeon who has seen much, and observed closely, and who gives forth the result of actual experience.

Students now-a-days read little else than manuals. They are but little, so far as their reading is concerned, brought under the expanding influence of the writings of original observers; to have, therefore, something of the enthusiasm and earnestness of the original inquirer infused into the manual is a great gain. Although we broadly differ from not a few of Mr. Bryant's conclusions, we admit that his work has this great merit. When we differ from him we feel instinctively that, whatever view he holds, he has not formed his opinion without having a good deal to say for it.

It would be absolutely impossible within the limited space at our disposal to give even a brief analysis of Mr. Bryant's book. We must be content to speak of it in general terms. We can readily believe that it is a book which not a few persons engaged in the teaching of clinical surgery will hesitate to recommend to their pupils. It does not adopt a milk-and-water style, telling us that some eminent surgeons recommend this; others, equally eminent, that mode of practice—leaving one under the impression that each is about equally good. Yet, for our part, we think it precisely the kind of book which a conscientious teacher of clinical surgery should be glad to see in the hands of his students; he must take care, however, to modify by his instruction the views of the author where experience and observation at the bed-side lead him to adopt other ideas. It is a work to excite discussion much more than manuals in general; the enthusiasm of the author is calculated to awaken a corresponding earnestness when opinions conflict, to give greater weight when opinions are in harmony.

We quote one passage as an example of the practical method with which Mr. Bryant deals with a subject.

*"On the Diagnosis of Scrotal Tumours—*I propose now to consider the subject of diagnosis of scrotal tumours as a whole, to describe the train of

thought as it passes through the surgeon's mind in his attempt to diagnose a tumour of the testis, and to point out the special symptoms, or their combination, as they tend to indicate the presence of any special affection. Fully recognising the great difficulty so frequently experienced in forming a positive opinion as to the nature of a scrotal tumour, I believe that a near approximation to truth may generally be made when the history of the case and its special symptoms, are carefully weighed, and I am not disposed to place amongst the impossible the diagnosis of a scrotal tumour, because occasionally great difficulty may be experienced, or it may be beyond our power to form any positive opinion upon the point. There are gradations of probability in all our conclusions as to the diagnosis of any disease; a certainty, untainted by fallacy or doubt, is rarely obtained, and I take it, we are as often correct in our judgment of a scrotal tumour as we are of any other affection.

"The first point the surgeon has to decide, on being consulted as to the nature of a scrotal tumour, has reference to the question of hernia. Is the tumour connected with the testicle? or has it passed down the direction of the cord from the abdominal cavity? Should the surgeon be able to isolate the growth at its neck from the abdominal cavity by the thumb and finger, the question is at once decided, for almost all scrotal tumours can be so isolated, it being quite exceptional for any to pass up the cord so far as the internal ring. Rare cases of vaginal hydrocele, or hæmatocele, in which the tunica vaginalis is open up to the internal ring, form an exception.

"This important preliminary point having been decided, the nature of the growth claims our attention next.

"Is it a hydrocele or a hæmatocele? Is it the product of inflammation or of tubercular disease? Is it a new growth altogether, and if so, is it innocent in its nature or malignant?

"Should the tumour prove translucent by transmitted light, the existence of a hydrocele may fairly be decided, although the form of this affection may yet be doubtful. Is it an ordinary vaginal hydrocele, or is it encysted? Should the tumour be large, even, and pyriform, and should the testis be found, either by means of manipulation or by the opacity displayed at one spot on transmitting light—at the posterior part of the tumour—vaginal hydrocele may be suspected; but should the testis exist in front or at one side, and should the tumour be small and have been of very slow growth, and should it be more or less globular or evidently multilocular, a cystic hydrocele may probably be diagnosed. The tapping of the tumour will, however, settle the diagnosis; for in vaginal hydrocele the fluid will be more or less straw-coloured and albuminous; in the encysted it will be thin, non-albuminous, pale, and probably opalescent, containing on microscopical examination granules and spermatozoa.

"The presence of hydrocele is thus readily decided in the majority of



cases, but in rare or old instances the tumour is at times opaque, thus complicating the diagnosis. The history of these cases will, however, tend to throw much light upon the point, for it will to a certainty reveal a disease of very long standing; the tumour will be probably painless and fluctuating, and the testis will be made out in its usual position at the posterior part of the sac. Should a doubt exist, a puncture with an exploring trocar and canula will decide the question, for in these cases fluid will be drawn off of a dark colour, loaded with cholesterine.

"We will now pass on to the consideration of tumours which are not translucent, and not hydrocele, and it is here that the surgeon experiences true difficulty in his diagnosis, for almost all the diseases of the testis are insidious in their growth, and most are painless in their development. The hæmatocele usually follows upon some strain or injury, and increases with tolerable rapidity up to a certain point, and is accompanied with pain which soon subsides; it then becomes stationary as to size, and remains torpid for a variable period, when pain again appears, with other signs of inflammation. The presence of the testis is also to be made out by manipulation towards the posterior part of the organ. The surface of the tumour is always smooth, more or less oval or pyriform, and semi-elastic or fluctuating.

"The inflammatory affections of the testis have a peculiar shape, being laterally flattened; they are usually accompanied at some period of their course with tenderness and pain, and often associated with fluid in the tunica vaginalis. In the syphilitic inflammation this fluid is often copious. Both organs are also generally involved, either together or at different times. The tumour is usually somewhat tender to the touch, and has a firm fibrous feel, unlike the semi-elastic and half-fluctuating sensations given by cystic or carcinomatous disease. In very chronic cases the testis may, however, be perfectly painless, and will allow of any amount of manipulation without distress; the natural testicular sensation will also have disappeared. In syphilitic disease the surface of the tumour will probably be irregular, with firm fibrous outgrowths in different parts and in the tunica albuginea.

"In the tubercular affection of the epididymis or testis there should not be any difficulty in the diagnosis, for the tubercular deposit, as a rule, takes place unaccompanied with any pain, or any symptom beyond that produced by its deposition. When deposited in masses—its usual form—it feels like some foreign body introduced into the body of the gland or of the epididymis; it is at first quite painless and unproductive of any symptoms, these only appearing when the material begins to soften down, and excite some inflammatory action in the parts around. The tubercular material may be deposited in one mass or more masses, these subsequently, perhaps, coalescing into an irregular induration. When suppuration takes place, the diagnosis is complete.

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"The cystic or simple tumours of the testis are painless from the beginning, painless during their growth, as well as on manipulation, and are to be recognized by purely negative symptoms. They attract the patient's observation only from their size; can be handled without exciting pain, and are usually free from even the natural sensation of the organ upon pressure. They are slow in their progress, uniform in their outline, and more or less globular; are always confined to one gland; are rarely accompanied with fluid in the tunica vaginalis; and, on being punctured, emit only a more or less blood-stained glairy mucus.

"The cancerous tumours of the organ are more rapid in their development than the cystic—a year's growth, as a rule, giving a large tumour; they are likewise painless, and readily allow of free manipulation. The natural sensation of the organ also soon disappears. They are unaccompanied with a hydrocele, and also involve only one organ. They have a more elastic and fluctuating feel than the cystic, and the inflammatory enlargements, and when their outline is unequal or bossy, the projection is generally softer than the other portion of the tumour. An exploring needle, or trocar and canula, rarely, if ever, reveals the mucoid fluid so characteristic of the cystic or simple affections, but usually lets out blood or the thin creamy fluid so characteristic of a cancer. In the preceding table the chief points of difference in the several chronic affections of the testicles are clearly shown."

Chapter LXV., on the microscopical anatomy of tumours, is a notable feature of the work. It is executed, Mr. Bryant tells us, by his friend and colleague Dr. Moxon. It is short, but contains quite as much on the subject it deals with as is requisite in a work on surgery. It is very clear and concise, and accomplishes in half-a-dozen pages as much as it is possible to do in the space. The chief use of investigating the microscopical anatomy of tumours is, after all, that we may know what we are speaking about. If we are not to look at morbid growths entirely from the side of their clinical history, if the old and very indefinite nomenclature and classification of tumours is gradually to assume something of a more definite form, so that various surgeons may know, with some slight attempt at precision, that they are speaking of the same structure, we must call in the aid of microscopical anatomy. To aid in arranging within proper classes growths, the chief interest of which in the eyes of the surgeon will still be their clinical history, progress, and risk of return, Dr. Moxon's pathological *resumé* is invaluable. He insists on the simple and obvious truth, which it is so difficult to get into the minds of those imbued with the ideas and

nomenclature of former days; that tumours of the most various histological structure may prove auto-infectious or malignant; differing, however, a good deal in their histological structure: they also differ much in the *degree of malignancy* affecting each group. They are thus arranged, then, according to their degrees of malignancy.

1st. Carcinoma in all its forms (the most cancerous of cancers, or if you will, the most malignant of malignant tumours).

2nd. Sarcoma (less cancerous than the foregoing, and in some of its forms having little tendency to infect the lymphatic system).

3rd. Myxoma; and 4th. Lymphoma.

Some such classification certainly seems to be the best in the present state of our knowledge, since it is based in part on the microscopical structure, and in part on the now recognized degree of malignancy which a long and sad experience has shown to exist in tumours differing widely from each other in histological characters.

The woodcuts illustrating this chapter, although diagrammatic, are extremely well adapted to show the transition from one structure to another amongst those belonging to the same group.

Throughout the work are distributed no less than 507 illustrations. For the most part, they are remarkably well executed; indeed, some of the woodcuts are admirable specimens of art. Along the sides of the pages are side-notes, which greatly assist in reference to passages which the student may wish to find again.

In conclusion, we have to repeat what we stated at first, that Mr. Bryant's book is one which we can conscientiously recommend, both to practitioners and students, as an admirable work.

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*Operative Surgery adapted to the Living and Dead Subject.* By C. F. MAUNDER, Surgeon to the London Hospital, &c. Second Edition. London. 1873.

As a text-book of operative surgery for the use of students, Mr. Maunder's book is in many respects good and useful. It is clearly written, and the descriptions of the details of operations given in it show that the author is not only very familiar with his subject, but further, that he is very familiar with the teaching which students require in this branch of surgery. The steps of each operation, which are the special difficulties in the way of a student

learning operative surgery, are described in the practical method of a teacher familiar with the causes of failure of his pupils. Experienced operators, who are themselves good anatomists, but who have not taught the student to operate, commonly omit such matters, as they assume their readers to possess a knowledge of anatomy as good as their own. Such is far from being the case with the ordinary student, whose knowledge at commencing to operate is imperfect, and only derived from open and extensive dissections, not from the limited view of parts, as seen in any surgical dissection. To the small size of the book its chief fault is, no doubt, attributable—namely, the almost complete absence of any reference to authority. This omission seriously diminishes its utility, for our experience is that it is next to impossible to induce the student to use more than one text-book in this or any branch of education. Too many read none at all. If, then, the student provide himself with Mr. Maunder's book as his only guide, he will not even have seen the names of the authorities which should be familiar to him. In the former edition of his book, Mr. Maunder disclaimed all intentions of originality; in the present he directs attention to but two proceedings to which he lays claim on this ground. He recommends, in the operation of excision of the elbow, that the fibrous expansion which covers the anconeus muscle, and which is connected with the triceps tendon and the fascia of the forearm, should, with the muscle, be raised and preserved as carefully as the ulnar nerve. The benefit of this proceeding will be, he holds, to insure to the patient an active power of extension of the forearm as compared with the extension by mere weight of the limb, which, Mr. Maunder states, is the common condition after the operation. We have no doubt that much benefit will be derived from attention to this point, but we do not entirely agree with him as to the degree of extension ordinarily preserved, for with the H-shaped incision, when properly limited, we have seen good active power of extension preserved in more than one case.

The modification of excision of a portion of the lower jaw, which is alluded to by the author in his preface, appears to be most desirable where it is practicable—namely, the excision of parts of the bone by incision within the mouth, without external wound.

The illustrations, which are, the author states, borrowed, with permission, from other authors, are most of them familiar to us;

but some might, we think, have been better selected. For instance, the only illustration of a tracheotomy canula given is that recently published by Mr. Durham, of which we have no hesitation in stating that a worse instrument we have never seen for its purpose. It possesses the radical fault of having its inner tube so reduced in size by rivets and other fittings of its ill-made "lobster's tail," that it must, if used, be choked at once; and the external tube is certainly liable, from its insecure fastening, to fall down the trachea, and certainly not benefit its possessor. Mr. Maunder says but little about the instrument, but it is the only one he figures, or even mentions. Mr. Bryant, in his *Surgery*, published last year, goes further, for he says of this instrument, that "it is to be preferred." The principal injury to the profession likely to follow from these statements would appear to be that some unwary country practitioner may be induced to order a modern improvement so advertised, and only learn its faults after he has paid his money for it.

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*An Introduction to Pathology and Morbid Anatomy.* By T. HENRY GREEN, M.D. Second Edition. London: Henry Renshaw, 1873. 8vo, pp. 366.

THE fact that considerably less than two years has elapsed since the appearance of the first edition of this work, is evidence at once of the great want felt in this country of a concise account of the results of modern pathological research, and of the success with which the author has endeavoured to meet it.

It is a work which, though open to a good deal of criticism, cannot fail to be of great use to the student and to his teacher; and we know of no country where such a book is more needed than in Ireland. It is essentially, as it professes to be, an introduction to the study of pathological anatomy, or rather pathological histology, and, as such, gives an outline and classification of the various morbid processes sufficient to enable the student intelligently to enter into a more accurate investigation of the subject.

The first chapter is devoted to the consideration of the cell as the most important element in nutrition both in health and disease; and having briefly sketched the history of the subject from the time when the similarity of the ultimate elements of animal tissue

to a vegetable cell was first pointed out by Schwann, the author adopts the view originally advanced by Brücke, that all that is essential to the constitution of a cell is a mass of protoplasm capable of exhibiting independently all the phenomena of life, but considers that the nucleus is a constant and almost invariable constituent.

The rôle sustained by the cell in the animal economy leads to the division of the subject matter of the work under two heads, according as the phenomena are dependent respectively on a diminution or exaltation of nutrition. As the result of arrest of nutrition we may have—first, general or systemic death; secondly, gangrene or necrosis; and, thirdly, molecular death or necrobiosis. General death is dismissed without further comment. A short chapter is devoted to gangrene, while the consideration of molecular death finds its place in the chapters following, which treat of the results of impaired nutrition, viz.:—Atrophy and the morbid infiltrations and degenerations. The second and by far the larger part of the work treats of the phenomena arising from exalted nutrition, hypertrophy, and the new formations. The hypertrophy of an organ may be due merely to an increase in the size of its component elements, in which case it is said to be “simple,” or it may arise from an increase in the number of the elements, thus constituting a “hyperplasia.”

The new formations are either inflammatory or non-inflammatory, and chapters XI.–XXIII. are devoted to those of the latter class.

With the object of enabling the student to grasp at the main points of the subject on which he is about to enter, the author begins each chapter with a definition. All who are conversant with the writings of the great workers in this branch of science, will readily admit the extreme difficulty attendant upon such a course, and the utter impossibility of making such definitions adequate and scientific. Hence it is not surprising if, in many instances, we are unable to compliment the author on his success in this respect. For the Dublin student, undoubtedly the most valuable part of the work is that devoted to tumours. At the outset the question suggests itself—what is a tumour? The definition given is “a non-inflammatory growth, which, having attained a certain size, either remains permanent, or, more frequently, *tends continuously to increase.*” This, we must confess, is by no means satisfactory. Then, again, he defines the carcinomata as “new formations of an epithelial type, without any intercellular substance, grouped together irregularly within the alveoli of a more or less dense fibroid stroma.” This also is unsatisfactory. Still we would

gladly see the student starting with such a definition as this, if for no other reason but to divest his mind of the idea of there being any specific "cancer cell."

The tumours are classified under three heads:—1. Those of the connective tissue type, comprising sarcoma, fibroma, myxoma, lipoma, enchondroma, osteoma, and lymphoma; 2. Those of the epithelial type, viz.:—papilloma, adenoma, and carcinoma; and 3. Those of the type of the higher tissues, myoma, neuroma, and angioma. They are then discussed *seriatim*. We regret that the author uses the term cancer as the histological equivalent of carcinoma. We should have been much better pleased had it been retained as synonymous with the clinical term malignant, if used at all in a work on histology. The macroscopic appearances and clinical history of many tumours, which are now known to be sarcomatous, have been so accurately described by the older pathologists, and handed down to us under the title of cancer, that it seems a great pity that a term which has become classical in a definite clinical signification, should be needlessly used in any other.

In chapter XXIV. is given a sketch of the phenomena of inflammation, more especially of those determined by the experimental researches of Cohnheim, Stricker and his school, and Burdon-Sanderson. This is followed by a lengthy chapter on tuberculosis and one on pyæmia and septicæmia. Tuberculosis is here placed under the inflammations, tubercle having been classed in the first edition as a tumour under the lymphomata. In the chapter on tuberculosis special prominence is given to the results obtained by Burdon-Sanderson and Schüppel, the author having verified many of those arrived at by the latter for himself.

Inflammation of the various organs is treated of in the succeeding chapters, which are followed by three devoted to changes in the blood and circulation. The last chapter contains directions for the preparing and mounting of specimens.

1. *Experimental Researches on the Causes and Nature of Catarrhus Æstivus (Hay Fever or Hay Asthma)*. By CHARLES H. BLACKLEY, M.R.C.S., Eng. London: Baillière, Tindall, and Cox, King William-street, Strand. 1873. 8vo, pp. 202.
2. *Autumnal Catarrh (Hay Fever)*. With three maps. By MORRILL WYMAN, M.D., late Hersey Professor Adjunct of the Theory and Practice of Medicine in Harvard University, New York. Published by Hurd & Houghton, the Riverside Press, Cambridge. 1872. 8vo, pp. 173.

THE authors of each of these works have the privilege of being sufferers in their own persons from the diseases on which they write. An autobiography of disease from the pen of a skilled physician is always interesting, and it is fortunate that many medical men have thought it their duty to record their own sufferings, as well as those of their patients, for the good of mankind. The account of diphtheritic paralysis, as experienced by Dr. Priestley,<sup>a</sup> Professor of Midwifery in King's College, the history of the "Passage of a Biliary Calculus,"<sup>b</sup> and the work of Lawson Tait "On Sciatica," will serve as illustrations of the value and interest attaching to personal experiences of disease on the part of medical men. Even in the case of the laity, when they become their own reporters, there is a vivid reality about their descriptions not to be found in the accounts of those who, however much they may sympathize with, cannot fully appreciate the sufferings of others. A perusal of the "Journal of an Asthmatic"<sup>c</sup> will exemplify this statement. It is true that too close and constant self observation in disease may cause the picture to be overdrawn or distorted. Baron Ernest Von Feuchtersleben<sup>d</sup> mentions that a patient whom he attended became convalescent from the moment that he prohibited him from continuing a journal which he kept of his condition. It is remarkable that Bostock,<sup>e</sup> the original describer of hay fever, was himself a sufferer from this complaint, and his account of the affection is in reality a description of his own case. In his second communication<sup>f</sup> the disorder was

<sup>a</sup> Lectures on the Principles and Practice of Physic. Sir Thomas Watson. Vol. i., p. 896. 1871.

<sup>b</sup> *Dubl. Quart. Jour. Med. Sci.*, Vol. xxi., p. 434.

<sup>c</sup> *Dubl. Med. Jour.*, Vol. xiii., p. 23.

<sup>d</sup> *Principles of Medical Psychology*. Syd. Soc. Trans., p. 325.

<sup>e</sup> *Med. Chir. Trans.* London: 1819. Vol. x., part 1, pp. 161-165.

<sup>f</sup> *Op. Cit.* 1828. Vol. xii., pp. 437-446.



designated "Catarrhus Æstivus," or "Summer Catarrh." The title of Dr. Wyman's book is "Autumnal Catarrh" (hay fever), because in the northern part of the United States of America there are two distinct forms of annually returning catarrh; one known as the "rose cold," or "June cold," commencing during the last week in May, or the first week in June, and continuing until about the first week in July. This corresponds in most of its symptoms, and in the time of attack, with that popularly known in England as "hay fever," or "hay asthma." It is from the other form, which occurs in autumn, commencing the last week in August, and continuing till the last week in September, that Dr. Wyman suffered, and which, he believes, has been pretty generally confounded, both by sufferers and physicians, with ordinary occasional catarrh, or with the "hay cold," or "June cold."

All the cases of the American autumnal catarrh agree in the time of annual return, about the 20th of August, varying but a few days from this date in different years. In nearly nine-tenths of those attacked it begins during the 3rd and 4th weeks of August. In some individuals it has been noticed to return on precisely the same day of the month. Dr. Wyman believes that this regularly recurring *autumnal catarrh* of the northern portion of the United States does not exist in Great Britain, France, Switzerland, or Germany, and mentions the case of a traveller, a native of Germany, who had suffered fifteen years in the United States, and was quite free in his native land; he was again attacked on his return to the United States. The symptoms, both local and constitutional, appear to differ in no essential points from those of our *summer catarrh*, or hay fever. The gist of Dr. Morrill Wyman's book is to draw attention to the existence of an autumnal form of the disease which had hitherto been confounded with ordinary catarrh. He has collected eighty-three illustrative cases, which are set forth in a tabular view at the end of the volume. One of the most interesting questions connected with autumnal catarrh is its geographical distribution, inasmuch as thereby is indicated the great and only remedy which is successful in all stages of the disease, a removal to a non-catarrhal region. There is no becoming acclimatized to this complaint; predisposition, once developed into a full attack, will continue in a greater or less degree through life. Dr. Wyman has never met with a case in which the disease failed to make its annual appearance so long as a patient remained in a catarrhal region. Upon excellent maps of New England, the Eastern United States,

and of the White Mountains and vicinity, are laid down in colours the catarrhal regions, as already known. The author considers the term hay fever inapplicable to the disease he describes, because, among other reasons, the hay in New England, where his investigations were principally made, has generally been cut and got in a month before its appearance; yet, from the title of the book, "Autumnal Catarrh (Hay Fever)," some might think that he regarded them as synonymous. As to its etiology, he admits the influence of individual predisposition, but believes that its essential cause is unknown.

Dr. Blackley's book gives the details and results of a series of experimental researches on the causes and nature of hay fever, and the result of these investigations leads him to the conclusion that in this country the exciting cause of this malady, as it occurs in summer, is the pollen of the grasses or cereals, and also that if a patient can, at the time these are in flower, avoid the neighbourhood where they are grown, he will to a large extent escape the attacks. He suggests for the disorder the name of *Pollen catarrh*, or *Pollen asthma*, as indicative of the agent which is known to produce it in every country in which it has yet been seen, in preference to the term applied to it when it was supposed that the emanation from hay in the process of being made was the principal cause of it. At the same time he does not contend against there being other agents which may produce symptoms not unlike those of hay fever.

In a review of the opinions held as to the causes of hay fever, Dr. Blackley shows that they have been various and conflicting, although upon one point all authors are agreed, viz., on the existence of some peculiarity of the constitution which predisposes to the disease. Bostock, the first writer who gave a full description of the ailment, laid the foundation of the theory that heat was a much more active cause of the disorder than the emanations from grass or hay, and thought himself warranted in asserting that in his own case the effluvium from hay had no connexion with the disease. Gordon\* thought that hay fever was caused by the aroma emitted by the flowers of grass, particularly from those of the *Anthoxanthum odoratum*: first, because this plant is one of the most strong-scented of the grasses; and secondly, because so soon as it begins to flower, and not until then, the asthma commences. As the flowers arrive at perfection the disease increases, and after they had died

\* Lond. Med. Gaz., Vol. 4v., 1829, pp. 226-229.

away he remarked that patients could pass through the most luxuriant meadow with total impunity. He held that the disease should rather be denominated *grass asthma* than hay asthma, since hay seemed incapable of producing it. Dr. G. T. Gream,<sup>a</sup> who was a sufferer from the affection, held that the dust from beaten carpets, from the roads, and from other sources, could produce the same distressing symptoms as the farina of grass, or of any other flowering plants. He pointed out one very important feature in the phenomena of hay fever, the influence which a shower of rain has in diminishing the intensity of the symptoms. Dr. Abbotts Smith<sup>b</sup> suggests the question whether hay fever may not in some degree be attributed to the irritating effects of benzoic acid. M. Vogel has ascertained that benzoic acid exists in two of the grasses most blamed for the production of the complaint, namely, the *Anthranthum odoratum* and the *Holcus odoratus*. As the attacks of hay fever are almost invariably worse during the continuance of hot dry weather, Dr. Smith observes that the benzoic acid might be liberated from the grasses by the agency of summer heat. The eminent physicist Helmholtz,<sup>c</sup> for twenty-one years a sufferer from an annual attack of hay fever, for five successive years found in the nasal secretions certain vibrio-like bodies not observed therein at any other time. Dr. Philipp Phœbus, Professor of Medicine at Giessen, who has produced one of the best monographs on the subject, considers *the first heat of summer* to be one of the strongest causes in producing the disorder.

In the experiments with the presumed causes of hay fever, undertaken by Dr. Blackley, the object aimed at was to single out the agent, which, in his own case, might be the principal, if not the only cause of the disease. His researches include experiments with *benzoic acid*, with *coumarin*, with *odours* of various kinds; experiments on the action of *ozone*; observations on the effects of *dust*; experiments with *pollen*, and observations on the influence of *light* and *heat*. The experiments with benzoic acid yielded uniformly negative results; they were tried by breathing the air of a room in which the acid was freely exposed to the air, by applying a watery or spirituous solution of the acid to the mucous membrane of the nares, or by subliming the acid at high temperatures and inhaling the fumes. Coumarin is an odoriferous principle found

<sup>a</sup> Lancet, 1850, Vol. i., pp. 692, 693.

<sup>b</sup> On Hay Fever, Hay Asthma, or Summer Catarrh. 4th ed. London: 1866.

<sup>c</sup> Virchow's Archives, Vol. xlv., part 1, Feb., 1869., p. 101.

in some of the grasses, and in the plants of several of the other natural orders, being most easily obtained from the Tonka bean (*Coumarouma odorata*); it is by some German authors called "Tonka camphor." Respiration of air, charged with this odoriferous principle, produced no unpleasant effects on Dr. Blackley and some other persons liable to hay fever. In the experiments with odours of various kinds, none were found to produce the symptoms of hay fever except the odours given off by some of the microscopic fungi. The spores of *Chaetomium elatum* (the bristle mould) and of *Penicillium glaucum*, generated on damp straw, produced unpleasant effects, but more like the symptoms of ordinary influenza than those of hay fever. His observations on the influence of ozone, very carefully and patiently carried out, are against the notion that ozone is a cause of hay fever. Schönbein suspected that some catarrhal affections might be due to inhalation of air highly charged with ozone; but on or near the sea, where ozone is present in maximum quantity, hay fever is very seldom observed. Many authors have placed "common dust" among the exciting causes of hay fever. A microscopic examination of some common dust which excited symptoms of hay fever, led to the discovery therein of numerous pollen grains of the grasses. A film of glycerine was spread upon an ordinary slip of glass, and this was pressed upon the upper layer of undisturbed dust. This led the author to investigate the action of pollen on the respiratory organs, and he undertook a systematic course of original experiments, almost every one of which seems to point to pollen as the most powerful, if not the only cause of the malady. The pollen of the grasses and of plants belonging to thirty-five other natural orders, was experimented with by applying it to the mucous membrane of the nares, by inhaling it, and thus applying it to the lining membrane of the air passages, and in various other ways; the pollen of all the grasses, but especially the pollen of *Secale cereale* (rye) gave unmistakeable evidence of its power to disturb the healthy action of the respiratory mucous membrane. It is remarkable that in some of the most poisonous families (*Solanææ*), the pollen produced milder symptoms than that of the grasses. He considers it as proved that pollen possesses the power of producing hay fever, both in its asthmatic and catarrhal forms, and suggests that it does so by mechanical irritation of the mucous membranes, in the susceptible, by the *pollen tube* extending along the mucous membrane, or penetrating the mucous follicles, while the sub-mucous œdema may be due to the effect of the

granular matter (*fovilla*) of the pollen grain discharged from the tube. In not one of the many cases of hay fever, where heat seems to have been the exciting cause, has it been shown that pollen was absent. For instance, in a case given by Dr. Abbotts Smith, in which the attack came on whilst the patient was unfurling the sails of a yacht, a short distance out at sea, Dr. Blackley's experiments make it highly probable that the sails had become receptacles for pollen blown on to them from the land, and disturbed in unfurling them. By others this case would be set down to the effects of heat and physical exertion.

Having shown that pollen of all kinds would give rise to the symptoms of hay fever, Dr. Blackley undertook to ascertain what quantity of pollen was to be found in any given volume of air during any given portion of time. He gives two tables of curves, showing the number of pollen grains collected in each twenty-four hours, on a surface of one square centimetre, for many days in the early summers of 1866 and 1867. The pollen grains were deposited from the air on slips of glass, each having a cell formed on it with black varnish so as to enclose a space of one centimetre square. This square was coated with a fluid composed of one part of water, two of proof spirit, and one of glycerine. Five grains of pure carbolic acid were dissolved in each ounce of the mixture. Sudden diminutions in the quantity of pollen were invariably caused by falls of rain, or by rain and a fall in the temperature, events well known to palliate the symptoms of hay fever. As well as he could judge, ninety-five per cent of the pollen grains collected belonged to the Graminaceæ. To find if there was pollen in the air at high altitudes, and, if so, how much, he devised an ingenious instrument which was sent into the upper regions of the air, attached to the head of a kite. After the desired altitude was reached, a prepared slide was uncovered by clock-work. In one of these experiments the number of pollen grains, collected at an altitude of 1,000 feet, was over twelve hundred, and the spores of one of the Cryptogams, probably *Ustilago segetum*, were so numerous, that he could not count them. The atmospheric experiments are most interesting, and clearly show that pollen rises to high altitudes, and is carried very long distances by atmospheric currents.

Among other remarkable facts connected with hay fever, Dr. Blackley observes that every writer on the complaint has recognized the existence of a peculiar condition of the constitution, which gives a proclivity to attacks of the malady; that it is a disorder which is

almost wholly confined to the educated classes; that the persons most exposed to the action of pollen, namely, the farming class, furnish the fewest cases of the disorder; that, so far as he is aware, there is no instance of the disease having shown itself for the first time after the age of forty, although it may begin at a very early age; that first attacks are generally milder, and the susceptibility has a tendency to become more marked in each succeeding year; that almost all authors agree in the opinion that hay fever leaves no perceptible effects behind.

For all practical purposes he considers a simple division of the symptoms of hay fever into two groups—the catarrhal and the asthmatic—preferable to the more elaborate arrangement of Dr. Phœbus into six groups. In the catarrhal form we have not much pain, and scarcely any dangerous symptoms; in the asthmatic form, called by Dr. Phœbus laryngo-bronchial catarrh, though there is very little actual pain, the distress and suffering is often very great, and frequently the attacks appear to be very dangerous. In most cases, and especially in the earlier years of the disease, the action of the pollen seems to be concentrated in the nasal passages, next to these come the eyes, then the buccal cavity and the fauces, and lastly the larynx, trachea, and bronchial tubes. A feverish condition is rarely seen in any but the asthmatic form of the disease; he considers the dyspnœa in this form to be due to œdema, which is one of the peculiar local results of a topical application of pollen. The only treatment Dr. Blackley has found of use is to remove the patient out of reach of the cause. Refuge is not always obtainable on the sea-coast, as the wind, pollen-laden, may blow from the land; a deeply indented bay, surrounded by grass land, is unsuitable. For those who cannot go to the sea-side, the next best thing is to go to the centre of a large town; mountainous districts are often eligible; a cruise in a yacht is one of the best remedies that can be adopted.

In both these works, but more particularly in that of Dr. Blackley, there is abundance of information for those interested in the details of this complaint. Dr. Wyman's book, in defining the geographical limits of what cannot but be regarded as the same disease in part of the United States, in many ways corroborates the truth of Dr. Blackley's original investigations on what is, in all probability, the most common cause of hay fever—the irritating effect of pollen upon certain parts of the mucous surface of peculiarly constituted persons.

# PART III.

## HALF-YEARLY REPORTS.

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### REPORT ON

### MATERIA MEDICA AND THERAPEUTICS.\*

By WALTER G. SMITH, M.D., Dubl.; Fellow and late Examiner in Materia Medica, K. & Q.C.P.I.; Assistant Physician to the Adelaide Hospital.

- ART. 1. Anodyne colloid.
- „ 8. Apomorphia.
  - „ 5. Bromide of potassium.
  - „ 6. Carbolic poisoning.
  - „ 2. Citrate of iron and quinine.
  - „ 13. Copaiba as a diuretic.
  - „ 14. Croton-chloral in neuralgia.
  - „ 4. Digitalis.
  - „ 17. Ergot in headache.
  - „ 10. Hyoscyamus.
  - „ 12. Hypodermic solutions.
  - „ 7. Kinic acid and ferric chloride.
  - „ 15. Nitrite of amyl in angina.
  - „ 18. Oleate of mercury in syphilis.
  - „ 3. Pepsin.
  - „ 9. Podophyllum, irritant effects of.
  - „ 11. Propylamine.
  - „ 16. Rheumatism, blister treatment of.

1. *New anodyne colloid*.—Dr. Lackerstein proposes the following:—℞, amyl hydride ʒi., collodion (B. P.) ʒi, aconitiæ gr. i., veratriæ gr. vi. To be brushed over the painful part five or six

\* The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

times, so as to form successive films. If desirable, cover the part with spongiopiline.—(*Practitioner*, Jan., 1873.)

2. *Citrate of iron and quinine*.—In the case of this salt, as in that of many others, neither price nor appearance is any guide to the quality, and the result of examinations of commercial specimens, both in this country and in America, is to show that there is great and dishonest variation in the strength of this preparation. In the *Report* for February, 1871, some analyses were quoted, and since that Mr. A. W. Gerrard has tested eight samples of citrate of iron and quinine obtained from various sources and different makers, with results accordant with those previously arrived at. The B. P. requires that 50 grs. of the salt should yield 8 grs. of quinia, *i.e.*, 16 per cent., and Mr. Gerrard, operating on 50 grs. in each case, found in only 2 instances the prescribed amount of alkaloid, while in the other 6 specimens the proportion fell from 6 grs. in the 50 grs. to 5 grs.,  $4\frac{1}{2}$  grs., 4 grs., and  $2\frac{1}{2}$  grs. Thus a prescription prepared with the last example would not contain quite  $\frac{1}{3}$  the due amount of quinine.—(*Pharm. Journ.*, March 29, 1873.)

3. *Pepsin*.—According to Scheffer, a good and simple way of preparing, and, indeed, of assaying pepsin consists in adding an equal volume of a saturated solution of common salt to the slightly acid solution of pepsin. He also finds that true pepsin and bismuth cannot exist in the same solution, and, therefore, that the solutions sold under the joint names are worthless so far as pepsin is concerned. According to him also, the activity of pepsin is destroyed by alcohol (*e.g.*, pepsin wine), but von Wittich's experiments contradict this, and further light on the whole subject is required.—(*Lancet*, April 19, 1873). Some time since, as the result of nearly 300 experiments, Mr. Tuson ascertained, in confirmation of Dr. Pavy's opinion, that the pepsin prepared by Messrs. Bullock & Reynolds was far superior in quality to that of any other maker.—(*Lancet*, Aug., 1870), and in the last *Report* the worthlessness of the pepsin obtained from three of the most eminent firms in London was illustrated.

4. *Digitalis*.—In Volkmann's *Klin. Vortrage* (December, 1872), Ackermann gives a good summary of the action and uses of this important remedy, without, however, adding much that is not to be found in our own standard works and in monographs on digitalis.



The three best ascertained points in the physiological action of digitalis are:—(α). On the heart; (β). On the blood pressure apart from the heart; and (γ). On the temperature.

(α). The chief cardiac effects (in animals) are, first, diminution in frequency, then after a time a sudden and decided increase, and this is succeeded by a second slowing, with great irregularity, and finally the cardiac contractions are completely arrested. The slowing of the pulse is entirely due to a lengthening of the cardiac diastole, for the perceptible pulse is not more prolonged than before. and Ackermann follows Traube in explaining this by irritation of the peripheral branches of the vagus in the heart, i.e., inhibitory action. The sudden and well-declared acceleration is due to a paralysis of the vagus nerve-fibres, probably conjoined with sympathetic (acceleratory) irritation as well.

(β). The arterial blood pressure first rises, then gradually declines below the normal, and finally falls almost to zero, and these changes occur with the most various degrees of frequency of the pulse.

(γ). Ackermann follows Heidenhain in believing that the diminution in temperature is a result of the increased arterial pressure from the extra amount of blood carried through the cold surface of the body in an unit of time. Therapeutically considered, we have in connexion with these three points—

(a.) Since the result of the administration of digitalis in heart disease is exactly the same as that of compensatory hypertrophy of the heart when it occurs, digitalis is absolutely contra-indicated so long as the circulatory disturbances are compensated by hypertrophy in cardiac diseases. The cardiac affections which demand digitalis are most commonly mitral insufficiency and obstruction. Even in a weak and hopelessly fatty heart temporary relief is obtained, and although the frequency of the pulse may not fall the patient feels himself lightened by the drug through its influence on the peripheral arteries. Ackermann believes that digitalis acts as a diuretic indirectly, only through its influence on the heart, and perhaps by increasing the arterial pressure. A beneficial result of the prolongation of the diastole is that the cardiac muscle, which receives its nourishment principally in the state of relaxation, is placed under more favourable conditions of blood supply. The whole question of the use of digitalis in fever is obscure and unsettled, and its antipyretic qualities require to be very carefully watched.—(*Med. Times and Gaz.*, Feb. 8, 1873). Compare Dr. James Little's paper

*On the use of digitalis in the failing heart and delirium of acute disease.*—(*Dubl. Journ. Med. Science*, March, 1873.)

5. *Bromide of Potassium.*—M. Voisin, in an elaborate report (*Archiv. Gén. de Méd.*), divides the action of bromide of potassium into two heads—a sedative action on the spinal cord and medulla, and a constrictive influence on the muscular fibres and capillaries, as is seen in the anæmia of the organs and tissues which it produces. Hence we have clear indications for its usefulness—(a.) In epilepsy, chorea, tetanus, spinal irritation, &c. (b.) In simple congestive visceral affections, where no neoplastic effusion exists, in spermatorrhœa, &c. It is, on the other hand, useless in pains of peripheral origin, gastralgia, &c., or in chronic inflammatory affections, accompanied with plastic exudation or proliferation of tissue. Menstrual epilepsy is less favourably affected by the bromide. Sodid bromide M. Voisin regards as having an identical action, and bromide of cadmium produces vomiting, which renders its administration impossible.—(*Brit. Med. Journ.*, Feb. 8, 1873).

6. *Carbolic acid poisoning.*—Dr. Ferrier reports a case of poisoning by this substance, which presented the usual *post-mortem* appearances found in such cases. He finds Landolt's test to be by far the most delicate for carbolic acid, viz., *bromine water*, which produces a yellow precipitate of tribromophenol. To determine free carbolic acid in urine, distil it by itself, without sulphuric acid, because sulphuric acid may develop phenol (carbolic acid) from indican, or some allied substance, existing normally in urine (Hoppe Seyler). Another good test is to place a few drops of the solution on a porcelain lid, to add a drop of liquor ammoniæ, and then a small fragment of chloride of lime, around which the blue colour will rapidly appear.—(*Brit. Med. Journ.*, Feb. 15, 1873.)

7. *Kinic acid and ferric chloride, physiological action.*—M. Rabuteau states that kinic acid (the acid of cinchona) agrees in its action with citric and tartaric acids, and has no active properties peculiar to itself. Its alkaline salts have no taste, and are converted in the system into carbonates. Ferric (per) chloride is readily reduced by organic substances, and is absorbed as ferrous chloride from the stomach. When ferric chloride is injected into a varicose vein the coagulum which it at first produces disappears, because the ferrous salt produced hinders coagulation of blood, instead of inducing it.—(*Practitioner*, Feb., 1873.)

8. *Apomorphia*.—In the *Reports* for August, 1870 and 1872, some notice was taken of this remarkable base, and the observations of Pierce, Gee, Siebert, Riegel, and Boehm establishing its rapid and effectual emetic action were referred to.

The more detailed results of the experiments of the two latter authors on man and the lower animals (dogs and cats) are as follows:—Hypodermically it always produced distinct emetic effects, in doses varying from 3<sup>megrms.</sup> (0.046 grs.) to 11<sup>megrms.</sup> (0.169 grs.). The small dose required not only facilitates subcutaneous employment, but also offers a valuable boon to the practitioner in many cases, *e.g.*, with refractory children, or with adults in some kinds of poisoning, when coma or delirium hinder the administration of remedies by the mouth. *Apomorphia* never acts as a local irritant either in man or animals, and of all emetics is the one which acts most speedily, and with the least trouble to the patient. In fact, from Ackermann's experiments it appears that tartar emetic  $\frac{1}{2}$  gr. (?) every quarter of an hour does not cause vomiting for one hour and three quarters; hippo  $7\frac{1}{2}$  grs. every fifteen minutes, in three quarters of an hour; and sulphate of copper  $3\frac{1}{2}$  grs. every fifteen minutes, at the end of an hour. In man *apomorphia* causes vomiting in from four to sixteen minutes, and excites little or none of those constitutional disturbances which accompany the action of other emetics. The pupil is not affected; the pulse usually quickens temporarily at the period of emesis, and the digestive tube escapes being inconvenienced by any sequelæ, such as diarrhœa, pain in the stomach, or gastric derangement.—(*Rev. de Thér. Med. Chir.*, Dec. 15, 1872.)

9. *Podophyllum*, *irritant effects of*.—It appears that *podophyllum* dust is well known in the trade to produce "inflamed eyes," and an eruption of "scabs" on the arms and legs of the men who attend the mill in which the root is ground. The symptoms are said to pass off in a few days, and leave no ill results behind as a rule, because the men wear closely-fitting masks, with glass eyeholes, and the drug is, moreover, wetted to a certain extent, in order to prevent waste in the form of dust.

A man aged thirty-nine came under Mr. J. Hutchinson's care at Moorfields, with extensive superficial ulceration of each cornea, attended by intense general conjunctival congestion. He was in the habit of using sugar of lead to his eyes whenever they were inflamed from *podophyllum*, and he had had several previous

attacks of the same sort, but not nearly so bad as the present one. The day's work which gave rise to the present attack occurred about ten days before he applied at the hospital, and no symptoms of irritation appeared until the next day. He was not purged by the dust.—*Brit. Journ. of Hom.*, Jan., 1873, from *Med. Times and Gaz.*)

10. *Hyoscyamus*—its therapeutic uses.—Dr. Oulmont, continuing his studies on henbane, has published in the *Bull. Gén. de Thér.*, Dec. 15, 1872, an inquiry into the special uses of this drug in spasmodic and convulsive neuroses. On account of the variable qualities of the crude drug, he employed *hyoscyamia*, the alkaloid of henbane, which represents the whole activity of the plant, and by its fixity of composition gives greater precision to the results. In the main his observations agree with those previously attained by Dr. J. Harley, but he differs from the latter in holding a very high opinion of its value in certain spasmodic and convulsive neuroses, and gives cases to show that it cures mercurial trembling under circumstances when every other remedy had failed. It also produced notable improvement in senile trembling and paralysis agitans, but in locomotor ataxy it appeared to be useless.

11. *Propylamine*.—In the *Report* for last February a short notice was given of the revival of this agent as a therapeutic means, especially in the treatment of rheumatism, and since that it has attracted a good deal of attention. Fixity and purity of composition are, of course, essential points in testing the action of any drug, and in the case of complex organic substances, difficult to prepare, easy to adulterate, and liable to substitution by isomeric bodies, this is all the more necessary to attend to. Now, it appears that a good deal of what is sold under the name of "propylamine" is nothing more than a mixture of stinking ammoniacal compounds of different kinds, and a commission appointed in France, headed by M. Wurtz, reports that commercial "propylamine" is merely a complex product, containing trimethylia and ammonia in a greater or less degree of concentration. Consequently, since medical men are using a substance of variable composition the results cannot at all be depended upon.

Propylamine and trimethylamine (trimethylia) are isomeric, and their respective formulæ are—



Trimethylia is a very volatile liquid, which boils at about 5° C. (41° F.), whereas pure propylamine boils at about 50° C. (122° F.), has a strong ammoniacal odour, colours cupric solutions blue, and precipitates alumina from its solutions, re-dissolving the precipitate. The so-called "propylamine" used by Dr. Dujardin-Beaumetz, and which has been obtained from herring brine, is a colourless liquid, having an odour *sui generis* of herring brine and ammonia. But the reporters do not think that this substance is really propylamine, and they consider that nearly all the authors who have treated of this subject have mistaken an aqueous solution of trimethylia for that substance.

They suggest that pure trimethylia should henceforth be employed in medicine, either in aqueous solution, like liquor ammoniæ, or, should the disagreeable odour prove repugnant to the patient, as the hydrochlorate of the base, assuming that the effects of the salt are similar to those of the pure alkali. So far the experience of M. Beaumetz with this salt is satisfactory, and it is probable that such a substitution will be possible. The trimethylia might be prepared from herring brine, or, more simply, directly from methylic alcohol (wood spirit).—(*Pharm. Journ.*, April 12, 1873.)

12. *Hypodermic solutions*.—Attention has several times been drawn to the instability of solutions of alkaloids, and to the serious alterations in strength which they are liable to undergo by keeping. Some alkaloids are more prone to change than others, and, according to M. Constantin Paul, we may range them in a descending scale of alterability as follows:—Hydrochlorate of narceine and bisulphate of quinine, become much decomposed; sulphate of atropia and hydrochlorate of morphia, moderately; acetate of aconitia, scarcely; sulphovinate of quinine, hydrochlorate of quinine, sulphate of strychnia, and nitrate of veratria, remain permanent. Digitalin dissolved in alcohol keeps well; as also sulphate of morphia in glycerine, and M. Paul adopts glycerine as the best solvent for alkaloids for subcutaneous use (*Journ. des Connaiss. Méd. Mars*. 30, 1873). Supplementing M. Bourdon's observations (see *Report*, Aug. 1869), M. Carles' experiments have shown that a sulphuric acid solution of quinine lost in one year eight per cent. of quinine, and a tartaric acid solution

in the same time lost 9·4 per cent.; the solutions had become yellow, and were loaded with mycoderms. According to M. Carles, another curious change happens, viz., *conversion of some of the quinine into quinidine*, a less important alteration from a therapeutic point of view, on account of the similarity in action of the two alkaloids.—(*Rep. de Pharm.* Oct., 1871.)

## SPECIAL THERAPEUTICS.

13. *Resin of Copaiba as a Diuretic.*—Dr Wilks is convinced that the diuretic properties of the drug copaiba reside in its resin, of which he gives fifteen to twenty grains in mucilage and flavoured water three or four times a day, and he has had numerous cases showing its marked diuretic qualities. No doubt it often fails, but when it succeeds the result is more striking than that from any other diuretic with which he is acquainted. The resin is much more agreeable to take than the oleo-resin.—(*Lancet*, March 22, 1873.)

14. *Croton-chloral in painful affections of the fifth nerve.*—The hydrate of croton-chloral was made by Krämer and Puiner by the action of alkalis upon dichlorallyl and formic acid, and its physiological action was investigated by O. Liebreich. He found that in animals it produced a deep anæsthesia of the head without any loss of sensibility of the body, and death was caused by a paralysis of the medulla oblongata. In man an anæsthesia of the fifth only was noticed; the sensibility of the trunk, pulse, and respiration remain unaltered. In order to test its medicinal influence, Dr. Wickham Legg administered it to about twenty persons, nearly all women, who were suffering from paroxysmal pains in the regions supplied by the fifth nerve. In the majority of the cases there was caries of the teeth, and in about half there were signs of anæmia. The drug was given in doses of 5, 10, and 20 grains, dissolved in water, at bed-time. In all the patients, except two, great relief from pain followed the dose of croton-chloral; some of the patients said that they slept well after it; others that they did not sleep, but that the pains in the head and face either ceased altogether, or were much diminished. In two women the croton-chloral was of no use whatever, the pains being aggravated during the use of the medicine.—(*Brit. Journ. of Hom.*, Jan., 1873, from *Lancet*.)

15. *Nitrite of amyl in angina pectoris.*—Dr. W. H. Madden, of

Torquay, records in the *Practitioner* for December, 1872, the beneficial effects of nitrite of amyl in cutting short attacks of angina in his own person. He is fifty-seven years of age, and his father died of angina pectoris connected with atheroma of the coronary arteries. More than thirty years ago his own health broke down, with obscure heart symptoms and threatened lung mischief. In 1871 he had his first attack of angina, which recurred frequently, was very severe, and usually lasted about fifteen or twenty minutes. Little or no benefit was obtained from any remedy except morphia hypodermically. He then tried amyl nitrite, inhaling five drops, and the effect was truly wonderful. The spasm was, as it were, strangled at its birth; it certainly did not last two minutes, instead of the old weary twenty minutes. And although, as it continued, the frequency of the paroxysms was not diminished for some time, yet they were mere bagatelles as compared with their predecessors, and, under these improved circumstances, strength gradually returned, and he has since resumed his ordinary duties. In severe attacks the pain never yielded until the heart was violently affected by the drug.

16. *On the blister treatment of rheumatism.*—Dr. T. R. Peacock, in a careful paper in the *Brit. Med. Journ.*, Jan. 18th, 1873, states that he has regularly employed, since 1865, Dr. Davies' blister treatment, both as a means of cure, as ordinarily understood, and of relief. The blisters are generally two or three inches wide, and sufficiently long to encircle the limb, and they are applied above the chief joints which are affected. He speaks most positively of its benefits in severe arthritic rheumatism, and also in cases in which the symptoms, local and constitutional, were less severe, but where the patient's strength was greatly reduced, either from previous attacks of rheumatism or other cause, or where the heart was already seriously diseased. In these latter cases the free exhibition of alkalis, so useful in the former class, would be injurious. In the so-called rheumatic gout blisters are less decidedly useful, but in the chronic neuralgic forms of rheumatism the ancient practice of applying blisters is often very beneficial.

17. *Ergot in head-achs.*—Dr. Silver, of Sidney, Ohio, calls attention to the value of ergot, especially in cases of "sick headache," and of some kinds of head-ache unaccompanied by sickness of stomach. Though we cannot certainly predict whether ergot will,

or will not, do good in a particular case, Dr. Silver believes it to be superior to any other single article in the materia medica, and he prescribes 10-20 m. of Squibb's fluid extract of ergot, to be repeated every half-hour until relief be obtained, or four or five doses have been taken.—(*Practitioner*, Feb., 1873, *Philad. Med. and Surg. Rep.*)

18. *Oleate of Mercury in Syphilis.*—Mr. Berkeley Hill has employed this preparation in a large number of cases, and finds that it is very active, and sometimes excites violent smarting pain when the 30 per cent. solution is used. But the 20 per cent. or 10 per cent. solution, or the oleate of mercury and morphia may be continued as an application on even very sensitive skins. The great advantage of the oleate over any other form of mercury, when externally applied, lies in the rapidity of its absorption, and if, for example, a little of the 20 per cent. solution be gently rubbed night and morning over syphilitic papules, it is surprising how rapidly these decrease and grow pale under its use.—(*Practitioner*, April, 1873.)



## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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THIRTY-FIFTH ANNUAL SESSION.

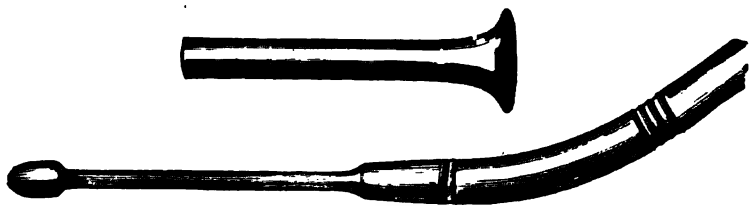
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JOHN R. KIRKPATRICK, M.B., Honorary Secretary.

LOMBE ATTHILL, M.D., Vice-President, in the Chair.

*Saturday, June 28th, 1873.*

The VICE-PRESIDENT (Dr. Atthill) exhibited an instrument he had devised for the purpose of facilitating the application of caustics, such as nitric acid and other agents, to the interior of the uterus, in cases needing intra-uterine medication. It consisted of a canula of platinum two inches in length, of the size of a No. 8 catheter at the distal extremity, but enlarged to that of a No. 10 catheter at the end next the handle, which end is also furnished with a narrow disc to prevent the canula slipping into the uterus—an accident very liable to occur when the uterus is enlarged and the cervical canal patulous. To this canula is adapted a



curved stilette, ending in a bulb, which fills the extremities of the canula accurately; the stilette is fitted to a boxwood handle eight inches in length. The canula fixed on the stilette may be passed into the uterus, just as a sound ordinarily is, and the index finger of the left hand being

kept in contact with the disc, so as to prevent its slipping out of the cervical canal, the stilette is withdrawn. A speculum is then to be introduced, and a long uterine probe, with a little cotton rolled round it, dipped into the agent selected, is to be passed through the canula into the uterus. The probe and canula can be withdrawn together. In many cases the speculum could be introduced first, and the canula inserted through it. The introduction of the canula was, he stated, seldom a matter of difficulty, for in general the cervical canal was, in suitable cases, patulous.

The Vice-President pointed out that this simple method enabled the practitioner to carry the caustic to any portion of the interior of the uterus decided on, without its being weakened by coming into contact with any other part, and at the same time protected from its action any portion of the cervical canal which it was deemed wise to avoid, and stated that he had derived the most satisfactory results from this method of treatment, and had succeeded in effecting a cure by means of it in cases in which he had failed to do any good by applications made in the old way.

DR. CRANNY exhibited, as a recent specimen, the uterus of a woman from whom a tumour had been removed on 16th June, in the Rotunda Hospital. She was about forty-seven years of age, the mother of five children, the youngest being six years old. She had always been regular up to five months ago, when she began to suffer from severe floodings, which had continued ever since. She was admitted on the 12th June in a very anemic state. On examining, *per vaginam*, there was a fulness anteriorly of the uterus, the os patulous, the sound caused such severe hæmorrhage that the perchloride of iron had to be used to control it. The tumour, which had been removed with an ovum forceps, was of a soft, friable nature, having a membranous capsule, and was apparently malignant. The specimen showed its base, situated at posterior wall, perfectly circular, with sharply defined margin, and about two and a half inches in diameter. Another smaller growth was placed near the fundus. No hæmorrhage followed the operation, but she sank in about thirty-six hours.

*On the Diagnosis and Treatment of Uterine Polypi.* By THOMAS MORE MADDEN, M.D., M.R.I.A.; Examiner in Midwifery and the Diseases of Women and Children, Queen's University, Ireland; Physician, St. Joseph's Hospital for Children; Ex-Assistant Physician, Rotundo Lying-in Hospital.

THE subject of this communication affords a striking illustration of the progress of our art. Within the recollection of some here present the diagnosis of an intra-uterine polypus was considered as impossible, and

its removal by a surgical operation was never dreamt of; whilst now any educated obstetric physician has it within his power to pronounce on the nature of such a case with absolute certainty, and to attempt its cure, with a fair prospect of success, by a rapid and almost painless and bloodless operation, by which he may rescue a fellow-creature from an otherwise inevitable death.

The uterine polypi that have come under my observation, and the history of some of which I now purpose to communicate to the Society, varied in form and size from the small, gelatinous, pea-shaped polypus, growing near the os, to the intra-uterine fibroid, as large as the mature foetal head, attached to the fundus uteri, and requiring the application of the midwifery forceps to complete the operation for its removal.

The minute theoretical classification of uterine polypi adopted by some recent writers, one of whom speaks of no less than ten different forms of this disease, appear to me very useless. In the cases I am about to describe, however, three distinct classes were distinguishable, viz.:—mucous, fibroid, and cystic polypi.

The first are developed from the uterine mucous membrane, or from the cervical glands; the second or fibroid, fibrous, or muscular polypi, are formed within the pseudo-muscular substance of the uterus, and may be interstitial, sub-peritoneal, or sub-mucous in their origin. The latter are also divisible into intra-uterine and extra-uterine polypi, or those which protrude through the os into the vagina.

The distinction made between intra-uterine tumours and intra-uterine polypi is quite untenable, as their structure is identical; either may be encapsuled, and their symptoms cannot be distinguished. In fact an intra-uterine fibroid polypus is but a more advanced stage of a sub-mucous tumour, which has lost its sessile form, from its own weight, as it grows downwards, becoming constricted at its point of projection from the uterine wall, so as to constitute a pedicle.

The age at which uterine polypi are most frequently observed is a disputed point. In the cases noted in the following table it will be seen that this disease manifested itself, in most cases, at the period in which the functional activity of the uterus was about ceasing, and from that time onwards.

*Cases of Uterine Polyp.*

Number of Case	Patient's Name	Age	Social Condition	No. of Children	How long since birth of last child	Prominent Symptoms	Nature of the Polypoid Growth	Observations
1	Mrs. H.	38	Married.	None.	—	Menorrhagia and leucorrhoea.	Fibroid polypus.	Five Tumours removed from anterior wall of uterus. Recovery.
2	E. H.	50	Widow.	Five.	Eighteen years.	Uterine pain; hæmorrhage and leucorrhoea.	Fibroid polypus.	Removed by ecraseur. Recovery.
3	M. B.	26	Single.	—	—	First felt tumour in abdomen 18 months before leucorrhoea, no hæmorrhage.	Fibroid tumour.	Treated by bromide and iodide of potassium. Iodine paint locally; tumour somewhat smaller.
4	Mrs. R.	44	Married.	Six.	Four years ago.	Tumour in abdomen; offensive leucorrhoea.	Fibroid polypoid tumour of uterus.	Tumour very large, would not submit to any operation.
5	B. L.	40	Married.	Three.	Six years ago.	Abdomen distended by the uterine tumour; no menorrhagia; some leucorrhoea; no pain; menstruation every three weeks.	Large fibroid uterine tumour.	The external application and internal administration of iodine for some months; result not known.
6	Mrs. M'M.	40	Married.	Three.	—	Menorrhagia.	Fibroid polypus growing from anterior wall of uterus, and projecting through the os.	Removal by steel wire ecraseur; recovery.
7	Mrs. Q.	60	Widow.	Five.	Fifteen Years ago.	Metorrhagia for five years; offensive leucorrhoeal discharge for three years, and uterine colic.	Fibro-cellular polypus growing from posterior lip of os uteri.	Removal by ecraseur with steel wire; recovery.
8	Miss M.	48	Single.	None.	—	Constant leucorrhoeal discharge; symptoms of retroflexion; slight metorrhagia.	Small mucous polypus from anterior lip.	Removal by torsion; nitric-acid applied; recovery.
9	Mrs. H.	29	Married.	None.	—	Intense uterine colic and metorrhagia.	Large fibroid polypus from anterior wall, near fundus.	Steel wire ecraseur employed on two occasions; uterus tightly contracted on tumour; rather less than half removed; death.

*Cases of Uterine Polypi—(continued.)*

Number of Case	Patient's Name	Age	Social Condition	No. of Children	How long since birth of last child	Prominent Symptoms	Nature of the Polypoid Growth	Observations
10	J. D.	60	Married.	Ten.	Fourteen Years ago	Incontinence of urine; incessant leucorrhoea; no pain, no haemorrhage.	Large fibroid polypus growing from fundus uteri.	Removal by ecraseur; recovery.
11	M. M'C.	40	Single.	None.	—	Severe uterine haemorrhage and foetid leucorrhoeal discharge for two months. Menorrhagia for three years.	Large fibroid polypoid tumour in vagina wall, growing from anterior uterine wall above os internum.	Removed by steel wire ecraseur.
12	Mrs. M.	30	Married.	Five.	Polypus detected when in labour.	Menorrhagia.	sessile intra-uterine polypoid tumour attached to anterior wall.	Refused to submit to operation. Treated by preparation of iodine, locally and constitutionally. Recovery.
13	Miss M'C.	40	Single.	None.	—	Menorrhagia and leucorrhoea.	Large fibroid polypus attached to fundus uteri.	Cauterized with acid nitrate of mercury. Solution of iodine in glycerine repeatedly applied to tumour. Preparations of iodine internally. Marked improvement.
14	M. B.	40	Married	Two.	Immediately.		Labour arrested by large cystic uterine tumour.	Forceps applied; cyst ruptured. Recovery.

# Symptoms of Polypus of the Uterus.

The earliest evidences of the complaint in the majority of cases of polypus of the uterus are menorrhagia or persistent metrorrhagia, and a profuse or foetid leucorrhœa. These symptoms indicate the necessity for a local examination, by which alone the nature of the case can be diagnosed with certainty.

In only one of the following cases of fibroid polypus was there any well-marked vascularity of the tumour itself, so that the hæmorrhage must have probably resulted from the accompanying uterine congestion and ovarian irritation.

The enlargement of the uterus, produced by the development of a large polypus, gives rise to a sense of weight and fulness in the pelvis, and some degree of pain, varying from the most intense uterine colic to a mere soreness or dull aching in the lumbar region, which is more commonly complained of.

In these cases the uterus is almost invariably displaced according to the size and situation of the tumour, and we have to encounter the symptoms of pressure on the bladder or rectum, &c., resulting from the degree of ante or retroflexion, or version, that may be present.

The patient's general health soon becomes impaired; she is weakened by the hæmorrhagic and leucorrhœal discharges. She is, therefore, anemic, her pulse is quickened, she suffers from cardiac palpitation, loss of appetite, dyspepsia, and irritability of stomach, so that distressing retching is a very constant symptom of this disease.

# Treatment of Uterine Polypi.

The treatment of uterine polypi may be considered under two heads—First, the surgical or curative, and secondly, the medical or generally palliative, though sometimes curative, management of the disease.

The former is comparatively recent in its application to intra-uterine polypi; for although Ambroise Paré, in whose works may be found the germ of many recent medico-chirurgical discoveries, described this disease and the mode of treating it by excision, by the ligature, and by the potential cautery with nitric acid, and actually devised and depicted a most ingenious dilator, for expanding the orifice of the womb, so as to remove intra-uterine polypi:—*De verruscarum cervicis uteri curatione.*—*"Ergo curandarum verrucarum tria erunt velut summa capita, vinculum, sectio et cauterium. . . . Ne aut repullulent instillabitur oleum de vîriolo, AQUÆ FORTIS sive chrysulca, aut capetelli ex qua cauteria potentiali concinnamus."*<sup>a</sup>

The method of treating uterine polypi so explicitly pointed out by the

<sup>a</sup> Ambrosii Parci—"De Hominis Generatione," caput xlii., vide "Gynæciorum, sive de Mulierum Affectibus et Morbum, Veterum et Recentium Scriptorum Auctoribus. Opera et Studio Israelis Spachii. Lib. i., p. 439. Folio. Argentinsæ: 1597.

"Father of French Surgery," fell into oblivion till M. Levret in 1749 revived the use of the ligature for the removal of uterine polypi from the vagina.<sup>a</sup>

This operation, which was practised from the time of Levret to that of Dr. Gooch, by whom it was modified and improved in 1829,<sup>b</sup> and continued in use till a very short time past, was obviously very restricted in its application, as well as rude and imperfect, when compared with the modern procedure, by which we can now expand an undilated cervical canal, and remove a tumour, however large, from any part of the uterine cavity.

The removal of a polypus from the uterus may be either the easiest or the most difficult operation in surgery, according to the form and situation of the tumour. Thus the small polypi growing from the vicinity of the os or cervical walls may be readily twisted off with a forceps, or destroyed by the mere pressure of a sponge tent. On the other hand, the removal of a large intra-uterine fibroid polypus from the fundus uteri of a sterile woman, is an operation requiring as much skill and delicacy of manipulation as any within the domain of surgery. The credit of suggesting the dilatation of the os and cervix uteri for this purpose by means of sponge tents is conceded to the late Sir James Simpson, by whom it was claimed in a paper "On the Detection and Treatment of Intra-uterine Polypi," published in the *Edinburgh Monthly Journal of Medical Science* for January, 1850, in which he says:—

"In 1844, in a communication laid before the Medico-Chirurgical Society of Edinburgh, I proposed a means of safely opening up the cavity of the cervix and body of the uterus to such an extent as might enable us to introduce a finger into the uterine cavity, for the purpose of diagnosis in this and other diseased states of the organ. The means described consisted in the introduction of sponge tents into the os and cavity of the uterus, so as gradually to dilate these parts to the degree required." Before the general adoption of this suggestion, even so recently as 1850, the same eminent authority asserted in the above-quoted paper:—"Intra-uterine polypi are generally considered at the present day as placed beyond the pale of any certain means of detection, or any possibility of operative removal." This discovery is spoken of by the most recent authorities as "making the commencement of a new era in uterine surgery." It is, therefore, not a little curious to find that the very same method of dilating the mouth of the womb was known and described at least two hundred and thirty-four years ago. Thus, in

<sup>a</sup> "Observations sur la Cure Radicale de Plusieurs Polypes." Par André Levret, Professeur de l'Accouchement. Paris: 1749.

<sup>b</sup> Dr. Gooch "An Account of some of the most Important Diseases of Women," p. 250. London: 1829.

"The Method of Physick, containing the causes, signs, and cures of inward diseases in man's body from the head to the foot," by Philip Barrough, and "most humbly dedicated by the author to his singular good lord and master, Lord Burghley," the eighth edition of which was published in 1639, the writer—speaking of the treatment of contraction of the cervical canal and os uteri giving rise to mechanical dysmenorrhœa, and producing sterility, &c., in the chapter entitled "Of Straightness of the Matrice"—says: "And when the places do seem to be softer to the feeling, then you must put a dry sponge, that hath a cord hanged at it, into the straight place, to the intent to make it wider, which, if it fall out, you must put in another that is thicker. Therefore, you must have many and sundry dry sponges ready." This ancient gynæcologist next refers to the possibility of these sponge tents producing inflammation in the mouth or neck of the matrice, and discusses its treatment, after which he continues—"When the inflammation is ceased, and the place is open, annoint upon a sponge a cerot made of oill of roses and goose grease, and use it untill it be healed, making the place a little sounder; but yet you must alwaies put in sponges untill the end of the cure, lest that the mouth of the womb do gather together againe."\*

This coincidence in no degree detracts from the merit of Sir James Simpson, to whom suffering humanity, as well as medical science, owes so much on other scores, as the first modern gynæcologist, to make a practical application of sponge tents in the treatment of a disease previously regarded as beyond the reach of curative treatment. I may, however, take this opportunity of observing that the number of such coincidences between long forgotten ideas and modern medical discoveries is far greater than could be readily credited by those who share in that neglect of the lessons to be gathered from the experience of the past, as embodied in the works of the older medical writers, and in that contempt for their opinions and observations which is, unfortunately, so prevalent at the present day.

The treatment of uterine polypi has been greatly facilitated by Dr. Kidd's method of rapidly dilating the cervical canal, by introducing at a single operation a considerable number of the late Dr. Sloane's sea-tangle tents. Sometimes, though rarely, however, this operation seems to produce considerable uterine irritation.

Once the passage has been thus sufficiently dilated the removal of intra-uterine polypi may be effected in various ways, viz., by the ligature, by torsion, by excision, by the curved scissors, or knife, Dr. Aveling's polyp-trite, Simpson's polyp-tome, the galvano-electric cautery, Dr. M'Clintock's hemp saw, or lastly, and most generally, by the ecraseur. In the following cases the strong steel wire ecraseur was commonly employed,

\* "The Method of Physick." By Philip Barrough, 8th ed., p. 198. London: 1639.



in preference to Dr. Marion Sims' ingenious chain ecraseur. The manner of employing this instrument is so fully described in all the recent text-books of gynecology, that I shall only observe that in the majority of cases, these polypi being attached to the anterior wall of the uterus, it is easier, to secure them with the ecraseur when the patient is placed on her back than when she is put in the left lateral semi-prone position, generally adopted in this country.

Immediately after the operation the uterine cavity should be swabbed out with strong nitric acid, applied on cotton wadding. The local use of fuming nitric acid in uterine diseases has been introduced into modern practice on the high recommendation of Drs. Ringland, Kidd,<sup>a</sup> and Atthill,<sup>b</sup> and the adoption of the recommendation has been productive of the greatest advantage in a number of cases in which I have seen it tried. Dr. Roe some time ago, in a debate on an interesting paper of his on the Use of the Perchloride of Iron, read before our Society, mentioned that this application of nitric acid was spoken of by Ambroise Paré, and I have just quoted the passage in which he briefly alludes to it.

The after-treatment of a patient from whom an intra-uterine polypus has been removed by the ecraseur is very simple, consisting of tepid vaginal injections of infusion of chamomile twice a day, together with the observance of an antiphlogistic regimen, and rest in bed for about a week.

#### MEDICAL TREATMENT IN CASES OF POLYPUS OF THE UTERUS.

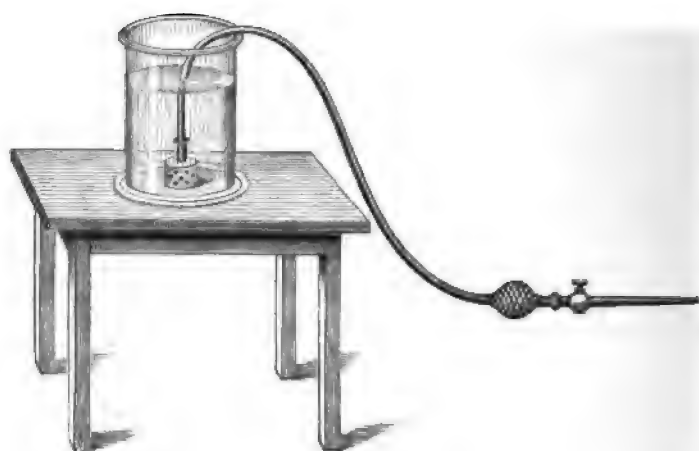
The medical or constitutional management of these cases has by no means kept pace with the recent improvements in their surgical or local treatment. It is obviously desirable to remove uterine polypi by the ecraseur, or other surgical means, whenever it is possible to do so, but there are some instances of this disease in which operative interference of any kind is not available, or will not be submitted to, and notwithstanding the opinion to the contrary expressed by some distinguished recent authorities, I am convinced by experience, that even in such cases we may sometimes succeed in arresting the progress of the disease, alleviating its symptoms, and restoring the patient to comparative health and comfort by purely medical treatment.

Moreover, in this, as in all other uterine complaints, the local surgical measures required should invariably be conjoined with appropriate

<sup>a</sup> Dr. Kidd "On Uterine Polypi."—*Dublin Quarterly Journal of Medical Science*, February, 1869.

<sup>b</sup> Dr. Atthill "On the use of Nitric Acid in the Treatment of Uterine Disease."—*Obstetrical Journal of Great Britain and Ireland*, June, 1873.





Improved Uterine Irrigator.

constitutional treatment. I need not dwell further on this point, having recently discussed it in a memoir read before this Society.\*

The remedies which I have found most serviceable in these cases were the bromides of ammonium and potassium, and small doses of the tincture of iodine, or of the weak solution of metallic iodine, which I recommended in the treatment of other chronic uterine diseases in the paper just mentioned. To produce any beneficial effect in so chronic a disease, these medicines must be persevered in for some months at a time, and this can be done only by administering them in very small doses. The local application of iodine to the tumour itself, when practical, is an essential and often most efficacious part of the treatment of uterine polypi. This was accomplished in one of these cases by Dr. Savage's method of injecting a small quantity of tincture of iodine into the uterine cavity, and in others by brushing over the tumour with a solution of ten or twelve grains of iodine in an ounce of glycerine. In both cases the os must be dilated, the operation should be repeated at distant intervals, and its effects very carefully watched. I must observe that this operation is by no means suitable, or even safe, in all cases. I have tried the effects of the perchloride of mercury in several cases of intra-uterine polypoid disease, and have in some instances found the patient's general health benefited, and the local symptoms improved under the influence of a mild mercurial course. With regard to the curative action of this remedy, my experience is the same as that of Dr. Routh, who says:—"I have seen cases of uterine fibroid where, I think, the enlargement had diminished under its use. I do not say that it has entirely disappeared."

Amongst the means by which the uterine congestion, which is almost always present in cases of polypus, can be lessened, none are so beneficial as tepid or cold local injections when properly used. To produce any marked service, however, the injected fluid must be used for a considerable period at each time, and this cannot be done when the ordinary vaginal syringe is employed, as the position of the patient is so irksome during its use, and the fatigue of working the instrument is so great as generally to prevent its employment for any length of time continuously. To obviate these difficulties, Dr. Graily Hewitt has devised an improved form of vaginal syringe. I myself, however, prefer the one now exhibited to the Society. This instrument has the following advantages—it is very portable, can be easily used wherever a vessel of water can be obtained, and is capable of sending a gentle continuous

\* On the Constitutional Character and Treatment of the Diseases of Women connected with Chronic Inflammation of the Uterus. By Thomas More Madden, M.D., Dublin Medical Journal, 1873.

<sup>b</sup> Lectures on Fibroid Tumours of the Uterus. By C. H. F. Routh, M.D. P. 99. London: 1864.

stream of plain or medicated warm or cold fluid into the vagina (or even into the uterus, if that should ever be desirable for any special purpose, for which a special tube is attached), for any length of time that may be advisable, and in any position that the patient prefers, without giving her the least fatigue.

During a recent discussion in this Society there was some debate as to the efficacy of the mineral springs, and especially of the iodated and bromated waters, to which I had called attention in the memoir above referred to, and also in my work on the Continental Spas, as applicable in the treatment of various forms of chronic uterine disease. I may, therefore, take this opportunity of expressing my conviction—founded on my own experience of spas, which has been freely borrowed by others, and which was gained by extensive personal observation of the effect of the mineral springs of this class in Germany, Switzerland, and France on patients undergoing “the course,” as well as in cases in which I have since then prescribed these waters—that in cases of uterine polypus in which, for any reason, operative interference is not available, we may possibly succeed in removing every apparent symptom of the disease by sending our patient to a suitable iodated or bromated spa, such as Kreuznach, Wildeg, or Schinznach.\*

Last summer I had a lady under my care, who, unquestionably, suffered from a large intra-uterine polypoid tumour, by which her health was seriously impaired. Notwithstanding the hæmorrhage and leucorrhœa however, she refused to allow any attempt to be made for its removal. She was induced to visit Kreuznach, where she remained for some time, using the baths and drinking the water. She returned home after a lengthened tour, during which she visited some other spas of the same class, and has continued apparently quite well till very recently.

I shall now briefly describe some of the cases of this kind (several specimens and drawings, for the later of which I am indebted to the kindness of Mr. William Johnston, are now exhibited), that have come under my observation:—

CASE I.—Mrs. M’M., aged forty, a cachectic-looking woman, who had had three children, consulted me, complaining of severe menorrhagia, of two years standing. She had also constant dull pain in the back, irritability of the bladder and dysuria; she had no leucorrhœa.

The uterus was retroflected, and a small polypus, about the size of a bean, was discovered protruding between the lips of the os; this was twisted off with Dr. M’Clintock’s forceps, and the retroflexion being

\* On the Spas of Germany, Switzerland, France, and Italy, in the Treatment of Chronic Diseases. By Thomas More Madden, M.D. London, Newby: 1st edition, 1865; 2nd edition, 1872.

remedied by a pessary, all the symptoms subsided, and she was soon convalescent.

**CASE II.**—Mrs. H., aged thirty-eight, who had been ten years married, and was sterile, a few months before she was placed under my care commenced to suffer from severe menorrhagia, and when I saw her was extremely weak and blanched from loss of blood. Her pulse was rapid, feeble, and irregular. She also complained of constant leucorrhœa, bearing down of the uterus, pain in the back, and incontinency of urine.

She now came up to town and consulted a very eminent physician, who kindly sent her to me to have the uterine polypus, which he at once diagnosed, removed. There was a large tumour protruding through the os, and above this there appeared to be other similar growths.

On the following morning, Dr. Kidd affording me the assistance of his great operative skill, which was fully displayed in this case, the patient was placed under chloroform by my pupil, Mr. Flanagan, and the parts being exposed by the duck-bill speculum, and the uterus drawn down by a strong vulsellum, the pedicle of the tumour was divided by a steel wire ecraseur, and in the same way the other polypi now exhibited were removed from the uterus. The weight of these five growths was 1,022 grains. The uterine cavity was then cauterized with strong nitric acid. The patient was put to bed and syringed twice a day with tepid infusion of chamomile, and in about a week's time she returned home to the country, and is now perfectly well.

**CASE III.** (reported by Mr. Maberly)—J. M'M., aged forty, mother of three children, came to the dispensary complaining of pain in the back extending down the right leg. There was also dysmenorrhœa, and for the past three months her menses had become so profuse as to incapacitate her for earning her livelihood. She was admitted into the chronic ward, and a large pedunculated fibrous tumour protruding through the os and attached to the anterior wall of the cervix was removed by the ecraseur. The patient was discharged convalescent a few days afterwards.

**CASE IV.**—I was called at night to visit a lady who had just arrived in Ireland and was suffering from profuse menorrhagia and uterine colic. She was about twenty-nine years of age, was exceedingly anemic and hysterical, and, though ten years married, had no children. She had suffered from menorrhagia and severe dysmenorrhœa for nearly three years, and during the past year the hæmorrhage was almost continual, and the pain could be allayed only by frequent hypodermic injections of morphia. She had thus been confined to bed under medical care for a considerable time, and had had the first gynæcological advice in London in consultation.

I found the cervix elongated, the os small, the body of the uterus greatly enlarged and antelected. After this examination I had to restrain the uterine hæmorrhage by sponge plugs saturated with the solution of perchloride of iron.

My diagnosis was that these symptoms were caused by some intra-uterine tumour, probably attached to the anterior wall. This view of the case, which was somewhat controverted by her former medical advisers, was confirmed by a most experienced gynecologist, Dr. Johnston, whose opinion I obtained in consultation. With his sanction, the fuming nitric acid was applied within the uterine cavity, and produced for the time the happiest effect. The hæmorrhage ceased and the pain subsided. The displacement was treated by a Hodge's pessary; tonics were prescribed, and she removed to one of the suburbs, where the next monthly period passed over with less pain and loss of blood than she had experienced for some years.

A month later, however, all the former symptoms returned in an aggravated form. The hæmorrhage became alarming, and her intense uterine sufferings necessitated the repeated use of chloroform. The retching was uncontrollable, her strength was failing, and it became evident that some effort must be made to remove the tumour.

Dr. J. A. Byrne now saw her with me, and we introduced nine laminaria tents into the uterus; five of these, however, I was obliged to withdraw the same evening, and, hence, we found the uterus so insufficiently dilated the next day that the operation had to be postponed. On the 28th of October, the tents were re-introduced, and, on the following morning, Drs. M'Clintock, Byrne, and myself, proceeded to remove the tumour. The uterus, however, was still so firmly contracted around the growth that great difficulty was experienced in the application of the ecraseur. We had succeeded in removing two sections, forming a third of the tumour, when, unfortunately, the patient became so collapsed from the chloroform, that, although her pulse, at last, was again faintly perceptible, her condition was so precarious that any further operative proceedings, at that moment, were out of the question. Drs. M'Clintock and Byrne having taken a part in this operation, is a sufficient proof that everything that skill and experience could suggest was done to remove the sole cause of this poor woman's past sufferings.

For five days after the operation she progressed favourably. On the seventh day, however, she had a slight rigor, and her pulse rose to 100. On the eighth day the symptoms of metro-peritonitis were well marked, and the following morning she died.

The uterus, enclosing the remaining portion of the tumour, is now exhibited to the Society.

CASE V.—J. D., a farmer's wife, from Ballycannon, aged sixty, was

admitted into the Rotunda Hospital, August 7th. She insisted that her changes had not ceased till two years previously. Immediately after that period she began to suffer from incontinency of urine, and had now lost all power of retaining her water. *She had no uterine hæmorrhage*, and complained of no pain. The uterus was found completely anteverted and enlarged, and there was a tumour, as large as a turkey egg, attached posteriorly. This, which proved to be a fibroid polypus, was removed with the ecraseur by Dr. Denham, then Master of the Lying-in Hospital, assisted by Dr. Guinness Beatty and myself. After the removal of the tumour all the symptoms of displacement subsided, and the patient returned home cured.

CASE VI.—I was asked by a midwife to visit a woman, in Frenchman's-lane, who had been in labour from Saturday evening until I saw her on Tuesday morning. The membranes had ruptured early, but the head had made no advance for many hours, although the pains had been strong. She was then in a low typhoid condition. The pains had ceased. Her pulse was weak and rapid. There was an offensive vaginal discharge, and the parts were hot and dry. The os was fully dilated, and the head very high up and prevented from entering the pelvic cavity by a cystic tumour, the size of my closed hand, growing from the posterior uterine wall, and obstructing the passage. Finding it impossible to push this above the head, I applied my long forceps with some difficulty, and used as much force to effect delivery as I deemed safe. But, as I seemed to make no impression, I was about to abandon the attempt, when the obstruction suddenly yielded, a quantity of gelatinous fluid escaped, the head came down, and the patient made a good, though slow, recovery.

CASE VII.—I was requested to see a lady in consultation with Dr. Boyle, of Rathgar. She had been for some hours in the second stage of labour, the funis was prolapsed, and the head making no advance, we delivered her by the forceps. The placenta being adherent, on introducing my hand to remove it, I found a large sessile tumour growing from the fundus. There was severe *post-partum* hæmorrhage. Several months subsequently, I again saw this lady, as the tumour at each monthly period enlarged to the size of an orange, and grew painful, and then became much smaller. She also suffered from menorrhagia and leucorrhœa. As she refused to submit to an operation, she was treated by the local application of tincture of iodine in the manner already described, and by the internal administration of small doses of iodine, together with the regular use of astringent vaginal injections. Under this treatment, the menorrhagia, after some months, diminished, and the size of the tumour decreased at each menstrual period. She was now recommended



change of air, and left me decidedly improved, though not perfectly cured, by the treatment.

**CASE VIII.**—Miss M., aged forty-eight, suffering from constant pain in the back, leucorrhœa, with occasional attacks of metrorrhagia, first consulted me about five years ago. These symptoms commenced on the cessation of her changes. On examination a small polypus was found growing from the anterior lip of the os uteri. It was at once removed by torsion, and from that time she has had no return of these symptoms.

**CASE IX.**—I was requested to see an unmarried woman, about forty years of age, suffering from severe uterine hæmorrhage, residing in Sussex-terrace. For upwards of three years she had complained of menorrhagia and uterine colic. These symptoms had so increased as to confine her to bed for the past couple of months. She was in a state of extreme exhaustion from the loss of blood, and on examination I found a very large globular tumour in the vagina. The leucorrhœal discharge was extremely foetid, and the hæmorrhage after examination necessitated plugging. A few days afterwards I induced her to enter the hospital, which I had then just left, where I had an opportunity of seeing the tumour, which weighed about twelve ounces, and was so large that the midwifery forceps had to be applied to remove it from the vagina, separated by a Dr. Atthill's ecraseur, by Drs. Johnston and Denham. The patient was soon convalescent, and when I last saw her, a few months ago, was in excellent health.\*

**CASE X.**—E. H., aged fifty, a widow, was admitted into hospital suffering from hæmorrhage. Six months before admission she noticed some enlargement of the abdomen, and subsequently had severe uterine pain, hæmorrhage, and offensive leucorrhœa. On examination a large polypus was found in the vagina, the pedicle being attached to the interior wall of the uterus. This tumour, which was as large as a small pear, fibrous in structure, and irregularly nodulated, and the pedicle of which I found unusually dense, was removed by the ecraseur under the supervision of Dr. Johnston, Master of the hospital. The patient made a rapid recovery.

**CASE XI.**—An unmarried lady, aged forty-two, two years before I saw her had to undergo much bodily fatigue and mental anxiety. Shortly afterwards she commenced to suffer from menorrhagia, and latterly was hardly ever free from hæmorrhage, the effects of which were evident in her anemic appearance. She had also leucorrhœa, pain in the back, sickness of stomach, was subject to attacks of fainting, and was now confined to bed in a very low, hysterical condition.

\* This case is referred to by Dr. Atthill, in his "Lectures on the Diseases of Women," p. 96, and is also reported by Dr. Cranny in the first volume of the Transactions of the Dublin Obstetrical Society, p. 147.

The os was small, the uterus was anteflexed, and occupied, as I found, on dilating the os, by a large sessile tumour growing from the anterior wall. It was evidently not then a case for operation, and having the acid nitrate of mercury at hand I applied this caustic cautiously to the tumour. Next day she complained of uterine pain and tenderness on pressure. This was developed into an alarming attack of acute metritis, which fortunately yielded to treatment. The hæmorrhage now ceased for nearly three months, but then returned. The os was again dilated, and the tumour painted over with the solution of iodine in glycerine on three or four occasions. She was put on five drop doses of tincture of iodine, with cod-liver oil, three times a day, and sent to a watering place, and from that time, as she passed out of my care on regaining comparative health, the disease appears to have been arrested.

**CASE XII.**—Mrs. J., a widow, aged sixty, who had ceased to menstruate shortly after the birth of her last child, eighteen years previously, applied for advice, suffering from metrorrhagia at irregular intervals. In her own words “her changes had returned” five years ago. She also complained of a very foetid leucorrhœal discharge. A week before I saw her, a very severe attack of uterine colic occurred, and on examination a large pedunculated tumour, growing from the posterior wall of the uterus, was found in the vagina. This was removed by the ecraseur, and was a deeply congested fibro-cellular polypus, the size of a small jargonelle pear. Considerable hæmorrhage followed, which was arrested by the application of the acid nitrate of mercury.

The VICE-PRESIDENT (Dr. Atthill) considered that the question of the treatment of fibrous tumours of the uterus by medical means ought never to be entertained, if it were possible to remove them by a surgical operation. He believed that it was a more dangerous procedure to dilate the cervix frequently—for the purpose of facilitating the injection of fluids or application of caustics or iodine—than to remove a tumour by operation. Personally, he believed patients were more likely to die from the effects of prolonged manipulation than from the actual operation. Two patients from whom he had failed to remove tumours, and who had consequently been subjected to rather protracted operative measures, had died; while in all the cases in which he had successfully removed the growth, no unfavourable results ensued. If, therefore, medicinal applications are to be made to the uterus, they should not be done by repeated dilations of the os and cervix, but through a tube such as that he had just exhibited. He (the Vice-President) thought that prolonged irrigation of the uterus and vagina with cold fluids, by means of a douche, such as that shown by Dr. Madden, was objectionable. He had seen a case which very nearly proved fatal, from an acute attack of pelvic cellulitis, ending in the formation of an abscess, in a lady who had used injections of cold water

into the vagina for the purpose of checking profuse menstruation. He, therefore, recommended that fluids so employed should be of the same temperature as that of the body.

DR. KIDD said he had never seen much benefit from the medicinal treatment of fibroid tumours of the uterus. When these tumours set up an inflammatory action, and the surrounding tissues become infiltrated with the products of inflammation, properly directed treatment will cause absorption of these, and so the tumour will appear to be lessened. But he had never seen any case in which the tumour itself had been actually diminished in size. This, he believed, was as true of the waters of Kreuznach as of other forms of treatment. These waters have a very high reputation, and patients suffering from fibrous tumours are constantly sent to Kreuznach. He visited Kreuznach last year, and had a long conversation with Dr. Præger, one of the leading physicians there and found he held the same opinion as to the benefit to be derived from the use of the waters as he himself did, and which he had already mentioned. Of the various drugs that have been recommended, Dr. Kidd thought the chloride of calcium makes the patients more comfortable than any other, especially when it acts a little on the bowels. Chloride of calcium was first recommended by the late Dr. Rigby, and it is spoken of very favourably by Dr. M'Clintock; but, though it alleviates the sufferings of the patient, he, Dr. Kidd, had never seen any case in which it caused absorption of the tumour. These tumours often become less in size, and sometimes almost quite disappear when menstruation ceases; but this cannot always be waited for, and then surgical treatment, that is, the actual removal of the tumour, is the only treatment to be relied on. Unfortunately, it is not always possible to accomplish this; if not, the application of nitric acid will often check hæmorrhage. Dr. Kidd referred to the position of the tumour in one of Dr. Madden's preparations, and also in Dr. Cranny's. In each, the tumour grew from the posterior wall of the uterus and bulged out the anterior wall. At previous meetings of the Society he (Dr. Kidd) had alluded to this bulging out of the wall of the uterus opposite to the seat of the tumour. If this be a law, it will prove a matter of great practical value, and enable us to make the diagnosis between a pedunculated intra-uterine and an interstitial tumour, by the sound alone, before proceeding to dilatation. If there be a tumour growing, say from the posterior wall of the uterus, it will cause a bulging forwards of the anterior wall, and the sound can be passed along the side that is bulged out; whereas, if the tumour be an interstitial one, the sound will pass, not along the bulged out wall, but along the opposite one.

DR. HENRY KENNEDY thought that there must be at least some cases of uterine fibroid tumours in which medicinal treatment was useful. If

medicines were so powerful, as was known, in the dispersion of superficial tumours, he did not see why they should not be of use in some uterine tumours, which were of various kinds, and differed in quality, structure, and density.

DR. CHURCHILL had never seen medicines or applications of iodine do any good in the treatment of polypi. He had, however, seen large fibroids enucleate themselves. He thought that the points started by Dr. Kidd were of extreme value, and likely to prove of great importance. Dr. Churchill then alluded to the curious circumstance (which, he stated, he was unable to explain) that the introduction of even a single tangle tent through the os internum sometimes produced very severe effects. He narrated a case in point, which nearly proved fatal, peri-uterine inflammation having been set up, with the formation of an abscess between the rectum and vagina. He was constantly in the habit of introducing a tent through the os externum and keeping it in the canal, by means of a plug, for twenty-four hours, without the slightest inconvenience or risk; but when once passed beyond the inner os, a region of danger was entered upon.

DR. MORE MADDEN, in reply, said that, in the foregoing paper, he had, in the first place, pointed out the antiquity of certain commonly supposed recent improvements in the surgical treatment of uterine polypi. Secondly, he had exhibited to the Society an improved form of uterine irrigator, which he ventured to think, from sufficient experience of its use, would be found very serviceable in the treatment not only of this but also of all other uterine diseases in which the syphon-syringe is now generally employed; and, thirdly, he had given the result of his own experience of the advantages of medical treatment, in some instances, of polypus of the uterus. In so doing he had not placed medical treatment in opposition to surgical treatment in these cases. Both had their own definite range of utility. But speaking, as he did, with unfeigned respect for the opinions of obstetricians so justly eminent as Dr. Atthill, Dr. Churchill, and Dr. Kidd, who differed from his views on this point, he (Dr. More Madden) could not lightly abandon his own opinions, founded on practical experience, and he was very glad to have them so strongly supported as they had been by so judicious and experienced a physician as Dr. Henry Kennedy. He still thought that the medical and constitutional treatment of cases of uterine polypi had been too generally neglected of late years; and whilst he attached fully as much importance to the surgical treatment of this disease as any gentleman present could do, and always resorted to surgical interference in every appropriate case, he would, in conclusion, again venture to remind the Society that, unfortunately, there were many cases of polypus of the uterus in which operative measures were not applicable, and that in these remedial treatment is oftentimes most serviceable.

The Secretary read a communication from Dr. E. G. BRUNKER, of Dundalk:—

*A case of Ovarian Dropsy, with unusual Quantity of Fluid.*

Rose Rooney, a married woman, forty years of age, was admitted to the Louth County Infirmary on the 19th of July, 1872, labouring under ovarian dropsy. Her appearance on presenting herself was most extraordinary, from the enormous size of the abdomen, the circumference of which measured sixty-three inches (five feet three inches). Her countenance did not exhibit any sign of distress. Breathing free, functions of bowels and kidneys healthy, slight emaciation. She appeared to have no source of complaint but from the vast distension of the abdomen. She stated that the abdomen had been gradually increasing in size for some years, and that, notwithstanding, about a year before she came to the infirmary, she gave birth to a healthy child, at full time, who survives. Since the birth of this child she says she occasionally, but not regularly, menstruates. The patient was placed in the recumbent position, the abdomen projecting considerably over the edge of the bed, and the operation of paracentesis performed, when *ten gallons* of a dark, oily fluid were drawn off. No distinct tumour could be detected when the abdomen was emptied. No bad symptom whatever supervened, and the patient, of her own accord, returned home on the 2nd of August, having been but fourteen days in the infirmary.

As it was evident that the abdomen was filling up and would again require to be tapped, she was advised to return for that purpose before it became as much distended as before.

Rose Rooney was re-admitted to the infirmary on the 6th of June, 1873. The abdomen was about the same size as on the former occasion, being five feet three inches in circumference. She still retained a healthy appearance, did not suffer from dyspnoea, was able to lie down flat in bed, and made no complaint but of the bulk and weight of the abdomen; no swelling of legs.

She was placed in the same position as formerly, and the same quantity (ten gallons) of oily fluid, but of lighter colour, drawn off. No tumour could be detected. The abdominal walls were, of course, extremely flaccid, and were supported by a broad firm roller. No occurrence of syncope.

She says, since her return from the infirmary, in August last, she has led a very active life, and enjoyed good general health, even occasionally menstruating.

On the second day after the operation, on visiting, I found her sitting up in bed, quite free from any uneasiness or pain, with fair appetite; sleeps well. On the fourth day she was ordered some beef tea. Bowels have acted daily. Urine perfectly healthy. I expect she will shortly be able to return home.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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SEPTEMBER 1, 1873.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

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ART. X.—*Select Clinical Reports.* By ARTHUR WYNNE FOOT, M.D., Junior Physician to the Meath Hospital.

- I.—SPINDLE-CELLED SARCOMA, ORIGINATING IN THE SUB-SCAPULAR DORSAL APONEUROSES; PROTRUSION INTO THE THORAX AND VERTEBRAL CANAL; COMPRESSION OF THE SPINAL CORD; DEATH; POST-MORTEM EXAMINATION.
- II.—ROUND-CELLED ENCEPHALOID SARCOMA, ORIGINATING IN THE AXILLARY GLANDS; DEATH.
- III.—PARALYSIS OF MOTION AND SENSATION IN THE HAND AND FOREARM FROM LOCAL CONTACT WITH CATTLE BLISTER (RED IODIDE OF MERCURY); RECOVERY.
- IV.—PARTIAL HEMIPLEGIA, WITH RHYTHMICAL UNILATERAL TREMOR IN THE AFFECTED SIDE, AFTER EXPOSURE TO THE INFLUENCE OF MERCURY AND LEAD; RECOVERY.

AN unmarried man, aged thirty-six, was admitted into the medical wards, 5th December, 1872, in search of advice about a large tumour on the right side of his back, and was placed under the care of Mr. Kendal Franks. He was very reserved as to his personal history, but from his superior manners, and the amount of education he possessed, it appeared as if he had seen better days. He had been of temperate habits, but had of late suffered much

from the privations incident upon very straightened circumstances. These matters had to be taken into consideration in estimating the diagnostic value of the emaciation which his tall, lanky figure presented. The immediate cause of anxiety to him was extremely severe pain in the left lower extremity, so severe that the day after his admission he wished that a pistol might be put to his head. He had had this pain almost continually for four months; it was increasing of late, and was worse at night. He described it as a "dead, heavy pain, unbearable;" it went from the ball of the little toe and the outside of the heel of the left foot upwards along the back of the leg to the knee, and sometimes into the "sinews of the ham;" it prevented him from sleeping; he could not lie on his back, not from the inconvenience occasioned by the size of the tumour, but from the pain in the leg being aggravated by that position. He usually lay in bed on his face, with his forearms crossed beneath his forehead; frequently if he lay down he would have to jump up in ten minutes; he was more comfortable in the erect position than in any other, and often spent the nights walking about the ward. He used a stick, and his usual position when I went through the ward was standing leaning with his back against the chimney-piece. There was nothing remarkable in the appearance of the left leg; there were a few varicose capillaries behind the left knee, but no œdema; common sensibility was unaltered, but there was a continual sensation of burning heat in the back of the leg, although its temperature was apparently normal.

The tumour on his back was first noticed three years before his admission; it was accidentally discovered, when of some size, by his feeling it in leaning backwards against some woodwork. He had gone some time afterwards to an hospital about it, and an exploring needle was put into it; his account of this examination was that some blood came out of it. He took no further trouble about it until the severe pain in the leg came on. The tumour at the time of his admission measured  $12\frac{1}{2}$  inches vertically and  $11\frac{1}{2}$  inches transversely; it was like a hump; it grew on the right side of the back, lying underneath the scapula, but not attached to or interfering with the movements of that bone; it projected towards the spinal column from underneath the vertebral border of the scapula, and downwards from beneath the inferior angle of the bone; it came as far forwards as the mid-axillary line of the side of the chest; it was hard, smooth, immovable, painless; the skin over the parts of it uncovered by the scapula was neither

discoloured, veined, nor adherent; it was dull and resistant on percussion, and gave no pulsation. He knew of no cause for the growth of the tumour; had never received any hurt or injury of the back. The vertebral column was strongly curved laterally, with its convexity towards the left, in the mid-scapular region where the tumour pressed most towards the middle of the back. The back did not feel weak, the right arm had its usual degree of motion; there were no enlarged glands in the neck or axilla. There was dulness of the right clavicle and front of the right chest as far as the nipple, and interrupted respiration over this region, elsewhere in the chest all was right; he had no cough.

The day after his admission  $\frac{1}{4}$ th grain of sulphate of morphia was injected into the back of the left leg; it did not relieve the pain, and produced vomiting to an unusual degree; he was then ordered one grain of extract of opium with three grains of extract of hemlock three times a day, and he at once found such relief from these pills that he asked to have them "a little larger." In a month's time (3rd January, 1873) I found the tumour had increased in size, the pain in the leg had subsided, and was felt more in the tumour than heretofore; sometimes the tumour was very tender; he had got accustomed to the morphia injections and could not do without them; the scapula continued unimplicated, and moved over the tumour with a creak, audible, and perceptible to the hand; a large vein ran upwards along the axillary line, and some smaller ones converged from the anterior part of the right side of the chest towards the axilla; some bluish patches of small varicose capillaries existed near the anterior margin of the inferior portion of the tumour; he had some pain, referred to the part of the back between the *left* scapula and the vertebral column.

About the middle of January the left foot began to swell; the œdema was of a remitting kind and never very extreme; he now seldom felt the acute pain in the limb from which he had formerly suffered so much, but complained of *weakness* in the hip and ankle joints of that side; there was as yet no paralysis of the limb; he was up, dressed, and going about every day. Towards the end of January he began to assume a new position for rest; instead of his former usual one of leaning upright against the chimney-piece, he adopted a semi-recumbent attitude, leaning back on his bed with a pile of pillows under the upper part of his back, and his feet out on the floor. Since Christmas, three or four lymphatic glands, about as large as small almonds, had become noticeable in



the right side of his neck. After having been more than two months under observation he went out of hospital, 17th February, 1873. He was re-admitted 16th May, 1873, having, in the meantime, completely lost sensation and motion in both lower limbs, and become cedematous from the umbilicus downwards. Although his bladder had been for some time overflowing, and the scrotum and thighs were much excoriated from contact with urine, he had no sense of uneasiness or of want of passing water, and was rather positive that there could be no water in his bladder, "because it was continually running away;" and yet the bladder formed a circumscribed oval tumour reaching to the umbilicus. Ninety ounces of urine were at once drawn off, dark brown, acid, sp. gr. 1.017, not containing albumen. At this time he had what I believe was urinous vomiting; there was beside him a basin, half full of a clear brown fluid, beneath which was a sedimentary stratum of a black colour, just like turf mould. This kind of black vomit had been distressing him very much for several days, but never occurred after the bladder had been emptied. The one basinful collected after his return to hospital was unfortunately emptied out before it could be chemically examined. The subscapular tumour had not increased much in size, but its surface felt more uneven, and was in places distinctly lobulated. He now complained most of his legs always feeling "burning hot," and of the same sensation all along his back; there were many large veins ramifying over the abdomen, especially on the right side. On tickling the soles of the feet movements occurred in the muscles of the thighs without his feeling them, but no stir in the limbs. A large bed sore soon formed over the sacrum and adjacent parts of the nates. His position was always in a sitting posture, leaning across his bed, with his back against a pile of pillows, and his legs out on the floor. He suffered greatly from thirst for the last few days he was alive, also from pain in the back, which was but slightly relieved by as much morphia as could be safely given owing to his weak condition; he often wished that he was "lying below in the dead-house." He became deeply jaundiced twenty-four hours before his death. The jaundice appeared to have been induced by emotional causes, as he was much excited about the disposition of some property he was possessed of. His death took place at 3 a.m., 26th May, 1873, and seemed due to prolonged and gradually increasing asthenia arising from pain, weakness, insomnia, and inability to take food.

During the time he was under observation his condition was

essentially sub-febrile. His average temperature, deduced from 61 observations, was  $99.1^{\circ}$  Fahr., while it ranged from  $97.6^{\circ}$  Fahr. to  $101.5^{\circ}$  Fahr. His average pulse (61 observations) was 96.3, ranging from 75 to 110. The respiration was slightly more rapid than normal, the average rate (56 observations) was 23.8 per minute. His appetite was slender, capricious, and finally completely failed. He exhibited a marked tendency to diarrhoea.

When the case first came under observation there was not much difficulty in arriving at the conclusion that the tumour had invaded the spinal canal, was encroaching upon the right side of the spinal cord, and that a process from it had implicated the upper part of the lung. I held the opinion that it originated outside the chest, and had thence proceeded inwards, in opposition to some who thought it came from within outwards, on the grounds that it would have engaged the cavity of the chest to a much more extensive degree than the physical signs indicated before it would have been compelled to make its way outwards, whereas it was known to have been about three years outside the chest, while the symptoms of invasion of the vertebral column were rather recent, and the physical signs of implication of the lung comparatively limited. As to the nature of the tumour, but for the fact of the indications of erosion of the vertebræ, it had many points of similarity in situation, history, appearance, absence of glandular enlargement, and lateness of cachexia, to lipoma. The integrity of the scapula precluded the idea of osteo-sarcoma of that bone. The physical examination of the chest in general excluded aneurism more than any local absence of pulsation in the tumour, as it is known that large intra-thoracic aneurisms pointing outward may be devoid of pulsation, owing to special peculiarities in the interior of the sac.

The body, examined eight hours after death, was cold, and of a saffron colour from jaundice. In dissecting the tumour, whose characteristics remained unchanged, the trapezius and latissimus dorsi muscles were found thinned and expanded over the portions of it to which they were respectively related; the rhomboid muscles were still more atrophied; the scapula was easily removed from it, and it then appeared of a distinctly lobulated form, invested with a strong capsule or fascia, which sent tough interlobular processes into it; numerous vessels, which seemed for the most part veins, ran in the shallow interlobular grooves. The substance of the tumour had, from its being stained with bile pigment, a very strong resemblance to fat in colour. The fascia

could be dissected in frequent layers off the dorsal part of the tumour. The mass of muscle and tendon occupying the vertebral groove at the right side of the spinal column was atrophied and reduced by pressure to a soft pasty mass. The 6th, 7th, and 8th ribs were absorbed at and about the situation of their angles, and through a wide chasm thus effected the growth passed into the cavity of the chest. A mass of the tumour about as large as a child's head was adherent to and pushed forwards the upper lobe of the right lung, which was collapsed, flattened out, adherent to, and expanded over the front of the intra-thoracic projection. There was no fluid in either side of the chest, nor any evidence of pleural inflammation contiguous to the tumour. Adjacent to the point of attachment of the 7th rib to the spine, a process of the tumour had eroded the vertebræ, and when the spinal column had been removed and opened carefully from behind, a lobulated process of the growth was seen to have made its way into the canal, to have firmly attached itself to the right side of the dura mater spinalis, and then worked itself round behind it, filling up the acute angle formed by the dorsal spinous processes, and which is usually occupied by soft reddish-looking fat, watery cellular tissue, and the ramifications of a plexus of veins. The theca was not ulcerated, its inner surface was apparently uninjured, and the cord did not appear softened or inflamed, but had evidently been exposed to strong pressure. There was a strongly-marked lateral curvature of the spine with the convexity of the curve to the left; the theca and cord participated in this scoliosis. When the left lung had been turned out of its side of the chest, which was easily done owing to the absence of adhesions, a tuberculous, lobulated mass, of the size of an orange, cream-coloured, with large veins ramifying over its surface, was seen projecting into the left pleural cavity from underneath the serous membrane, just external to the heads of the ribs and immediately to the left of the vertebral ridge, on a level corresponding to the situation of the perforation on the opposite side. No connexion could be found between this growth and the larger one on the right side; it appeared to be an independent growth, originating in the retro-pleural connective tissue of the left side of the chest.

During the dissection of the coverings of the tumour, while some of the lower and outer portion of the latissimus dorsi was being removed, the knife, in working, gave a tympanitic sound, and presently an indiscreet stroke opened a cavity whence came a puff

of most fetid gas, followed by a gush of purple-coloured, thick, pultaceous liquid. A stream of water injected into this cavity drove out more viscid, glutinous, and glairy contents; it appeared to be a local sphacelus, forming a gangrenous vomica in part of the sarcoma. The colour of the interior parts of the main tumour was whitish or cream-colour; the more external parts were tinged with bile pigment; the consistence of the mass varied from firmness to curdy clots or pulpy trabeculated masses. On the whole there was little vascularity except over its extensive surface, and in the interlobular septa. Various portions of it, examined while quite fresh, exhibited a marked preponderance of spindle-shaped cells, with one, two, or three tails. There was a great uniformity in the size of the cells. Various fresh and differently-prepared specimens of the tumour were submitted to the members of the Biological Club, and the members regarded it as a well-marked example of spindle-celled sarcoma. There were no secondary deposits on any of the serous membranes. One moderately enlarged gland was conspicuous at the bifurcation of the trachea. There were numerous small reddish peri-tracheal glands, none larger than the kernel of a cherry-stone, none lumpy or white; they were of the kind usually regarded as indices of "irritation." There was no enlargement of the mesenteric or lumbar glands; one single nodule of a warm yellow colour was found, immediately sub-pleural, near the apex of the left lung. The lower and middle lobes of the right lung were not visibly infected.

There was no structural alteration in the liver to account for the jaundice, which came on the day before his death, and which I considered as "emotional." The liver was large, weighed 5 lbs. 11 oz.; the small gall bladder held about two drachms of thick bile; the biliary ducts were all pervious; there were no enlarged glands in or near the portal fissure: the liver was smooth, reddish-brown in colour; the capsule thin and transparent; no deposit in or on the substance of the gland. The spleen, weighing 14½ oz., presented neither alteration of its capsule nor internal deposit. The kidneys, large and smooth, weighed together 19½ oz., the right 10 oz., the left 9½ oz. The cortical structure was much infiltrated with buff-coloured striæ; they appeared to be in a fatty condition. The heart, empty of clots, weighed 14 ozs.; its valves were normal and competent; its muscle was healthy; the right cavities contained coagula, parts of which were of a warm apricot colour from impregnation with bile pigment, which had likewise

stained the otherwise white chordæ tendinæ; the left cavities were empty; there was no atheroma in the large arteries.

CASE II.—*Primary Round-celled Encephaloid Sarcoma of the Axillary Glands; Comparative Observations on the Temperature of the Axillæ; Subcutaneous Injections of Codeia; Death.*

A poor woman was recommended for admission to the hospital. 16th May, 1873, on account of a "lump under her arm." It was apparent that, from the nature of the disease, there was no prospect whatever of even a temporary amendment, but it is gratifying to think that the misery of a painful death was greatly palliated by various resources of medical art, and that the care and attention paid to her by Mr. Marcus Given, the gentleman in charge of her case, very materially contributed to this object. Her gratitude was frequently expressed in the warmest terms, while the observation and management of her case was most instructive to all concerned with it. She was a married woman, aged forty-eight, mother of six children, all healthy. She had always been an industrious, healthy, hard-working woman, supporting herself by washing. About one year before her admission she observed two small "kernels, like beans," in the right axilla; they came there without hurt or other known cause. Soon after she first noticed these she applied to a medical man about them, and got a lotion which "put them back;" at all events they did not trouble her till six months before admission, when they again attracted her attention, and increased in size, but she was not really alarmed about them for two months, when there was a swelling in her right arm-pit as large as a lemon. This was the state of things four months before admission. When she came to the hospital she had a haggard, cachectic look, and the "lump under her arm" was a huge, hot, purplish-red, tumour, fully occupying the right axilla, projecting forwards to the right margin of the sternum; behind, to the vertebral border of the scapula (underlying that bone); superiorly, it almost buried the clavicle; below, its inferior limits touched a line drawn from the inferior angle of the scapula to the nipple. The small atrophied mammary gland was situated inferior to and had no connexion whatever with the axillary disease, nor had there ever been any symptom of derangement of the lacteal organs. The right hand and arm were œdematous, the right hand had no grasping power from the paralyzing pressure of the growth

upon the brachial nerves, it registered 0 with Robert and Collins' dynamometer, while the left hand gave 18 kilos. The skin over the axillary portion of the tumour was tense, glazed, dusky red; large veins ramified over the pectoral portion; the posterior and subscapular portions were the principal seat of pain, which varied between a "burning," "bursting," "panting," kind, and sometimes was a combination of all these kinds; pain also ran down the arm to the fingers, sometimes a burning pain, sometimes like pins and needles, at other times like a stream of cold water. There was a considerable amount of motion in the shoulder joint, its movements seemed solely embarrassed by the œdema and brawny infiltration of the skin, not by any implication of the articulation in the disease. A hard mass, the size of a hen's egg, was observed, on admission, in the right side of the front of the neck, exactly in the region of the right lateral lobe of the thyroid gland; this swelling began to appear two months before she came into hospital; its position caused it to be carefully examined on account of the great rarity of malignant infection of the thyroid body; it was seen not to be connected with that organ as it remained stationary in deglutition. She said she had not slept for a month, but that the sleeplessness was not altogether from pain, because she lay awake even when not in pain, but she thought "her nerves were all wrong of late." She could only lie upon the affected side; when on the left side the weight of the semi-paralysed and œdematous arm, acting as a lever of the first order on the axillary mass as a fulcrum, was most distressing.

She lived for six weeks and five days after her admission; the tumour, though hot, tense, red, and rapidly increasing in size, did not ulcerate, nor the skin give way at any point, much as it seemed threatening to do so. By careful bandaging of each finger separately, and then of the hand, forearm, and arm, the œdema was kept from increasing much. On 10th June the comparative measurements of the upper extremities were as follows:—right wrist,  $6\frac{1}{2}$  inches; left,  $5\frac{1}{2}$  inches; right forearm at widest part,  $10\frac{1}{2}$  inches; left, 7 inches; right arm at the insertion of the deltoid,  $12\frac{1}{2}$  inches; left,  $7\frac{1}{2}$  inches. At this date the right side of chest, on a level with the axilla, measured, from the middle line of the sternum, over the axillary tumour, to the centre of the spine behind,  $25\frac{1}{2}$  inches, while the left side in same direction measured 18 inches. Careful padding of the upper parts of the arm in contact with the axilla, and the use of hardening lotions, seemed to preserve the

skin of the parts from excoriation or sloughing. The temperature of the right axilla was several times compared with that of the left, and the thermometer indicated a local rise of temperature at the seat of disease; for example, 20th May, temp., right axilla, 100° Fahr., of left 99° Fahr.; 29th May, temp., right axilla 99·8° Fahr., of left 98·2° Fahr.; 5th June, temp. right axilla 100° Fahr., of left 99·1° Fahr. The diseased part was always sensibly hotter to the hand. Her pulse was invariably rapid, ranging, among many observations, from 120, at the time of admission, to 144 and upwards towards the close of the case. Both morphia and codeia were separately used hypodermically; she expressed a preference for the codeia, as it never sickened her, nor did it cause head-ache; she liked injections in the œdematous arm better than in the sound one. At first I thought that the needle pricks in the swollen arm would weep, and that the venous obstruction might be less favourable to absorption, but she expressed a preference in all respects for injections made in the arm of the affected side. The injections of codeia used at first were  $\frac{1}{4}$ th grain twice a day, and were subsequently increased to  $\frac{1}{3}$ rd grain twice a day. She also took codeia internally in large quantities, and at times opium. The spray of chloroform was used in the manner recommended by Dr. Hardy,\* to allay the burning and bursting sensations in the tumour; it succeeded in doing so, but the quantity of vapour necessarily inhaled, owing to the extensive surface to be acted on, affected her larynx, or she thought it did so, inducing a kind of spasm of the larynx, and seeing that the daily enlargement of the cervical glands was encroaching on the trachea, I feared the dyspnœa, which was imminent from this mechanical cause, might be attributed to the chloroform vapour, and so it was discontinued. The large veins coursing over the pectoral region of the growth ran in deep grooves, which gave to the finger the sensation of channels gouged out over the surface of the tumour; these vessels became very much diminished in size under the influence of the chloroform spray. There was wonderfully slight tenderness of the tumour to manipulation; it presented no pulsation, but anteriorly a loud systolic bruit was audible over its infra-clavicular portion, and posteriorly the double cardiac beat was distinctly heard. Gradually increasing dysphagia, with alteration of voice, and eventually stridor, especially loud during sleep, came on, with

proportionate increase in the size of the cervical glands, indicating the encroachment of the disease upon the œsophagus and trachea. As her end approached, the use of narcotics was discontinued to avoid the appearance of promoting a therapeutical *euthanasia*. She died quietly, apparently from extreme weakness, inability to take nourishment, and great constitutional irritation, without struggle, or any expression or appearance of "agony." The brachial œdema began to subside about forty-eight hours before death; the tumour gave way nowhere. There was no *post-mortem* examination made, but with a large trocar and canula I removed a sufficient quantity of the tumour to determine the main element in its histological composition. The blue veins were very conspicuous after death; the trocar penetrated it as a melon; a few drops of blood followed each withdrawal of the instrument. The substance withdrawn with the canula was soft, pulpy, pinkish white, cerebriform; the microscopic characters of the portions of the tumour thus removed were those of the round-celled sarcoma; there was great uniformity in the size of the cells, which had numerous point-like nuclei; a few spindle cells were observed, but the vast majority of the cellular elements were of the round-celled variety of sarcoma; portions, variously prepared, were submitted to a meeting of the Biological Club, and the members were of opinion that it was a well marked example of that variety of tumour.

These two cases illustrate the course and nature of two of the most common species of sarcoma, the spindle-celled and the round-celled. The term sarcoma was invented by Abernethy, and to the tumour in the first case he would have given the name of "pancreatic sarcoma," from the resemblance its lobulated form presented to the pancreas; this lobulated character became very much more strongly marked after the immersion of the tumour in spirits, owing to the shrinking of its interlobular connective tissue. The tumour in the first case was the fibro-plastic tumour of Lebert, the fasciculated sarcoma of Cornil and Ranvier,<sup>a</sup> the fibrous sarcoma or fibro-sarcoma of Virchow,<sup>b</sup> the spindle-celled sarcoma of Rindfleisch.<sup>c</sup> Its characteristic textural element is a short and narrow spindle-cell, with an elongated roundish nucleus, with or without nucleoli. Such tumours exhibit a preference for the connective-tissue membranes, fasciæ, vascular, and nervous sheaths, the subcutaneous and sub-

<sup>a</sup> Manual d'Histologie Pathologique. Prem. partie, p. 124. 1869.

<sup>b</sup> Pathologie des Tumeurs, tom. ii., p. 184. 1869.

<sup>c</sup> Text-book of Pathological Histology, p. 137. Am. Ed. 1872.



mucoous connective tissues, and occupy in malignancy a medium position between the fibromas and the medullary round-celled sarcomas; but in reference to this latter point, it is to be borne in mind how much the locality of a tumour of any kind, even of one elsewhere structurally benign, conditions its malignancy. The tumour in the second case was of a rapidly growing kind, the encephaloid sarcoma of Cornil and Ranvier, the round-celled sarcoma of Rindfleisch, frequently called encephaloid cancer, with small, uniform-sized, round cells, but never exhibiting the diversity of form presented by the cells of carcinoma; this tumour is the most malignant of all the sarcomas, the most liable to recur, and the most prone to disseminate itself through the various organs. In connexion with the second case, the papers of Mr. Butcher\* on "Encephaloid Cancer, existing as a solitary manifestation of malignant disease in the armpit," are of great interest, and the drawings of his cases are, even in matters of detail, so similar to the case above recorded, that, only for the difference in sex, the first of the two engravings, in which the disease is located in the right axilla, would pass as an accurate representation of my patient.

The temperature of both these cases, of what may be *clinically* called cancer, illustrated Wunderlich's<sup>b</sup> statement that it is a peculiarity of cancer cases that elevated temperatures are comparatively rare, and that the temperature generally maintains itself on a normal, or even subnormal plane, which, however, by no means precludes the occurrence of high temperatures through intercurrent complications, or at the close of the disease; but fever temperatures of long duration are at least rare in cancer patients. In obscure cases this fact is of much practical importance, inasmuch as the thermometer thus becomes useful in diagnosing between carcinoma and tubercle. Mr. Goodhart<sup>c</sup> quotes a case which occurred in Guy's Hospital of a patient who from extreme emaciation was supposed to have phthisis, but from the fact that the temperature was never high, the house physician suggested that it was a case of cancer, and a *post-mortem* examination afterwards confirmed this view.

The subcutaneous exhibition of codeia in the second case was not carried to any great extent; it has been used in much

\* *Dub. Quart. Jour.*, Vol. xxii., p. 258.

<sup>b</sup> *Medical Thermometry*, New Syd. Soc., p. 429.

<sup>c</sup> *Thermometric Observations in Clinical Medicine*, Guy's Hospital Reports, 1870, p. 415.

arger doses in the Meath Hospital and elsewhere. This patient took by the mouth more than 80 grains of codeia, as well as a great deal of opium and of morphia. It was rather used in order to vary the employment of the active constituents of opium with the prime object of relief to pain and procurement of sleep, than for the purpose of advancing therapeutic science by strict experiment. The rapidity of her pulse is not to be attributed to the well-known excitant properties of codeia, as it existed when she was admitted, and is a clinical symptom pointed out by Mr. Butcher. Given by the skin two grains of codeia, according to Harley,\* are equivalent at most, and in those who are easily influenced by a soporific, to  $\frac{1}{4}$  of a grain of morphia; and in those who are susceptible to the hypnotic action of opium it induces somnolency when given by the areolar tissue in doses of one or two grains. The solution of codeia for hypodermic use usually employed in the Meath Hospital is, codeia, viij gr., spt. vini., 3ss., ac. sulph. dil. 4 m., aquæ ad 3j. Of this 15 m. are equal to  $\frac{1}{4}$  gr. codeia.

CASE III.—*Paralysis of the Muscles of the Hand and Forearm from local contact with Cattle Blister (red Iodide of Mercury); Use of Subcutaneous Injections of Strychnia and the Induced Current; Recovery.*

This case was very characteristic of the local effects of mercury, and was under the care of Mr. (now Dr.) George B. Cooksey. A herd, aged twenty-three, of sound constitution, was admitted into the medical wards, 10th April, 1871, with loss of motion and sensation in the right hand and forearm. On the 13th March, a little more than three weeks before admission, he had rubbed a quantity of red mercurial ointment, as cattle blister, into three head of cattle who were affected with pleuro-pneumonia. He had been in the habit of rubbing this ointment into cattle all through the winter, but on this particular occasion he neglected the precautions adopted on former occasions. He had been accustomed to cover his hand with a bladder, and afterwards wash the hand with soap and warm water; on this occasion the bladder became frayed away, and the lather of sweat and mercurial ointment came in direct contact with his hand; he did not think it worth his while to get a fresh bladder; he also on this occasion only rinsed his hand in cold water. Next morning, on waking, he found his right hand

\* The Old Vegetable Neurotics, 1869, p. 178.

"numb-like," "as if it was asleep;" as he went to his work across the hills he dipped it into a brook "to waken it," and slapped it against his other hand, but it remained numb and powerless. He had two blisters applied, one above, the other below the elbow, and then sought admission into hospital three weeks after the occurrence. The condition of the right hand was one of weakness rather than of complete paralysis, for although he could not "grip" with it, the dynamometer showed a power of  $13\frac{1}{2}$  kilos. in the right hand, against 30 kilos. in the left hand. He could not flex, extend, abduct, or adduct the hand; he had a stinging sensation in the fingers; the deltoid was not affected, nor the muscles of the upper arm; there was no atrophy. He was ordered iodide of potassium in 5 grain doses twice a day, and subcutaneous injections of the liquor strychniæ, B. P., to be made in the right forearm; the  $\frac{1}{4}$ th of a grain was the amount of strychnia at first used, subsequently the  $\frac{1}{2}$ nd, every second day. On one day only was any tremor observed in the affected parts. 15th April, right hand = 14 kilos., left hand = 34 kilos. 22nd April, as he felt a pain in the right forearm from the elbow to the wrist, along the course of the median nerve, the injections of strychnia were discontinued, and the primary induction current of Stöhrer's battery was from this date employed daily. He quickly improved under the use of this battery, and before long had perfectly recovered the full power and use of his hand and forearm.

*CASE IV.—Partial Hemiplegia, with Rhythmical Unilateral Tremor in the affected side, after exposure to the influence of mercury and lead.*

A house painter and decorator, aged forty-one, height 5 ft. 11 in., weight 150 lbs., was admitted to hospital 29th October, 1872, suffering from a constant tremor in the left side of the body, attended with muscular debility in the upper and lower limbs of the same side. He was put in charge of Mr. Robert B. Smith, who investigated his case with extreme care and attention. The patient was a most intelligent man, of handsome features, and very prepossessing manners. He had been engaged at the finer descriptions of decorative painting for 26 years; had had much more to do with vermilion than lead in his particular department; had never suffered from colic; but occasionally, and to a very slight extent, from cramps in the stomach. There was no atrophy in

he muscles of the thumbs or elsewhere. The margins of his gums were slightly discoloured and prone to bleed when he brushed his teeth, and he had a "greasy, oily taste" in his mouth in the mornings. He was a married man, and had two children, both living and in good health. His wife had had one miscarriage. He had neither had syphilis nor met with any injury; his habits were steady and regular.

On the night of the 7th October, three weeks before his admission, he had slept in a freshly-painted room. In the course of the following day he had two "fits," and on the day after two or three more. In these "fits" he fell, lost consciousness, and was giddy after them. From the account received I considered them of an epileptiform nature. Before these attacks he had been engaged at a "heavy job" of painting in the county Kilkenny, a six weeks job of "flatting."

The tremor was of a very striking kind; it was a rhythmical contraction of the muscles of the left upper and lower extremity, more obvious in the upper than in the lower limb, observable also in the pectoralis major, latissimus dorsi, and serratus magnus of the left side, not in the cervical, facial, intercostal, or abdominal muscles. The contractions were at a steady rate of 320 in a minute. A strong "burr" was audible with the stethoscope in the muscles of the arm or thigh, and the shock from the muscles, communicated through the stethoscope, jerked up the head of the auscultator. The "burr" of the muscles was compared by Dr Stokes (who examined him with great interest) to the slapping of the floats of a paddle steamer's wheels against the water, as heard at some distance in a calm. The pulse could not be counted in the left wrist owing to the subsultus tendinum; he could hold nothing in the left hand, as much from weakness as from tremor; the left hand registered a power of  $1\frac{1}{2}$  kilos., the right of 20 kilos., with Robert and Collins' dynamometer. He had had the tremor for three weeks at the time he was admitted; it commenced in the fingers of the left hand, subsequent to the fits, went upwards towards the shoulder, and then down the left side into the lower limb. He felt when taken into hospital a "deadness" in the last two phalanges of the middle toe of the left foot; he was also "numb" along the radial border of the last two phalanges of the left thumb; over this region there was deficiency of sensibility to temperature, touch, and pain. As one spoke to him lying in his bed, the left hand trembled violently, and the motion of the left

foot could be recognized by the agitation of the bed clothes. When his attention was fixed on the hand it became steady, but it was ascertained by experiment that he could not voluntarily control its movements for more than 15 seconds. The hand of an observer could not repress the movements, but it restrained them. He found relief from having the arm tightly held and from a tight bandage, but a tourniquet did not answer, as when tight enough to moderate the tremor it caused obstruction to the circulation. The tremor was always arrested by a full inspiration, and remained in abeyance while the chest was kept at its fullest expansion. It kept him from going asleep, and insomnia was one of his most urgent symptoms. He had had no sleep for nine nights before his admission. His wife had noticed that the tremor did not cease when he did sleep, and the clinical clerk made the same observation after he was in hospital. The weakness in the left arm had been preceded by muscular pains. The tremor was observable in the right hand, but in a very much less degree than in the left. The tremor in the left lower limb was principally confined to the foot. There was no tremor in any part of the right lower extremity. The left foot was very cold at night, and could not be warmed by heated jars. The right leg perspired very much at night, while the opposite one remained dry. The action and sounds of the heart were feeble, but the rhythm normal. He had a constant sensation of thirst and heat referred to the stomach, and not relieved by cold water. He rose three or four times at night to make water, but there was never any albumen found in the urine. His sight he described as "middling good;" an ophthalmoscopic examination, made by an expert, revealed no anomaly. He was not incapacitated from walking, but was sufficiently ill to prefer to keep his bed. When he did walk he found that after about a dozen steps his left knee would suddenly give way and double under him. He had no pain in the head or any other part of the body; his appetite was fair. No fibrillation was ever observed in any of his muscles.

The day after his admission he was ordered a warm bath with four ounces of sulphuret of potassium in it, also 15 m. tr. nuc. vomicæ with 15 m. tr. fer. perchloridi three times a day; he had 30 grs. chloral at night, but his sleep was bad, and disturbed by jerks and starts. The next night he had suc. con. ʒij. pot. brom., 30 gr., spt. chlor., 3 ss., aq. ad. ʒij., and slept for three hours. On 2nd Nov. he was ordered 2 grain doses of iodide of potassium with

30 m. of hemlock juice thrice daily. He found the burning thirst much relieved by a mixture of half an ounce of dilute nitric acid to a pint of water. The left foot and leg were kept warm by a flannel bandage. On 3rd Nov. the temperatures of both axillæ were accurately compared with the same thermometer; that of the left was 98·6° Fahr., of the right 98·8° Fahr. The power of the left hand had increased to 4 kilos., of the right to 28 kilos. The "greasy taste" had left his mouth, and he had slept four hours after 2 drachms suc. con. and 30 grs. brom. pot. 7th Nov.—Able to control the tremor of the left hand with his right hand, which he had not hitherto been able to do. 9th Nov.—The left arm much steadier; the large nightly doses of hemlock juice (2 drachms) were showing their specific effect in drooping of the upper eyelids.\* 11th Nov.—Slept the whole of last night after a draught containing 30 grs. chloral and 30 grs. pot. brom. 14th.—Numbness leaving the left thumb, but still in centre toes of left foot; the left leg and foot now as warm as the right. 15th.—The iod. pot., which had been increased to 5 grs. ter die, now omitted on account of frontal headache. 16th.—Slept without any draught. 17th.—The tremor now confined to the hand (left); it had disappeared gradually from above downwards, ceasing first in the pectoralis major, then in deltoid, and so on. It has quite left the leg and foot.

He considered himself able to leave hospital and return to work on 25th Nov., although a slight tremor was perceptible in the left hand, and this he was able to control by will for 92 seconds at a time. He presented himself again 3rd Dec., as the muscular agitation had re-appeared in the left forearm and upper arm. A galvanic current from 50 Smee's cells was passed from the cervical spine along the left upper extremity; he felt the current much more on the left than on the right side; it produced marked contractions in the left deltoid and biceps, but none in the corresponding muscles on the right side. He was ordered iodide of potassium, and continued to attend for some time as an extern patient. He was next seen 6th Feb., 1873, when he had been for some time at his work, and was able to execute ornamental painting in as efficient a manner as usual. He was about leaving for Liverpool to undertake the decoration of a theatre in that city. The middle toes of the left foot were still numb. In illustration of their

\* Harley, *The Old Vegetable Narcotics*, p. 8.

anæsthetic condition, he mentioned that a sprig in the sole of his boot had lately injured these toes without his feeling it, or his being aware of it till he observed the blood on his stocking. The tremor in the arm was insignificant at this time. I saw him again 20th May, 1873, for an attack of tonsillitis, complicated with well-marked trismus, apparently from the effect of cold on the left temporal fascia. He then had not a trace of the former tremor; the thumb and toes had perfectly recovered their proper sensation; his left hand was as strong as ever, and was actually stronger than the right one, his grasp with the left hand being 55 kilos. (nearly 121lbs. av.), with the right 49½ kilos. (nearly 108.8lbs. av.).

The case of the herd was rather peculiar in the suddenness with which the paralysis occurred, and in its being unattended with tremor, as the latter phenomenon is usually observed when persons suffer from manual absorption of mercury. Dr. Mapother,<sup>a</sup> in his exhaustive paper on Mercurial Trade Diseases, mentions that an anatomy porter at the Royal College of Surgeons (Ireland), who at one time rubbed in large quantities of mercury for the cure of venereal among the *Mohawks*, or swells of the day, was subject for thirty years to mercurial stammering; and in former times the *Iatraliptæ*, an inferior class of surgeons, who practised as mercurial anointers or rubbers, without protecting their hands, were frequently subject to tremors which sometimes proved incurable.<sup>b</sup>

In the case of the painter it was difficult to know exactly to what cause to assign the tremor, for he had been very fully exposed to the poisonous action of the two metals, lead and mercury, most liable to induce tremor. Dr. Stokes was disposed to regard it as a case of *Tremor ab Hydrargyro*, and the patient stated that his business brought him in contact much more with vermilion than with lead. Although he had been employed at flatting previous to the convulsive seizures and had some gingival discolouration, it is to be borne in mind that mercurial tremor is much more common than lead tremor; some authorities, as Mérat,<sup>c</sup> have denied that any other metal than mercury could give rise to tremors, and Dr. Sanders considers that this opinion in regard to artisans using lead is probably correct.<sup>d</sup> It is also to be recollected that tremor saturninus is usually preceded by repeated outbreaks of the severer forms

<sup>a</sup> Med. Press and Circular, 23rd May, 1866.

<sup>b</sup> Syst. Med. R. Reynolds. Vol. ii., p. 206.

<sup>c</sup> Traité sur la Colique Méallique. Paris: 1812.

<sup>d</sup> Syst. of Med. R. Reynolds. Vol. ii., p. 214.

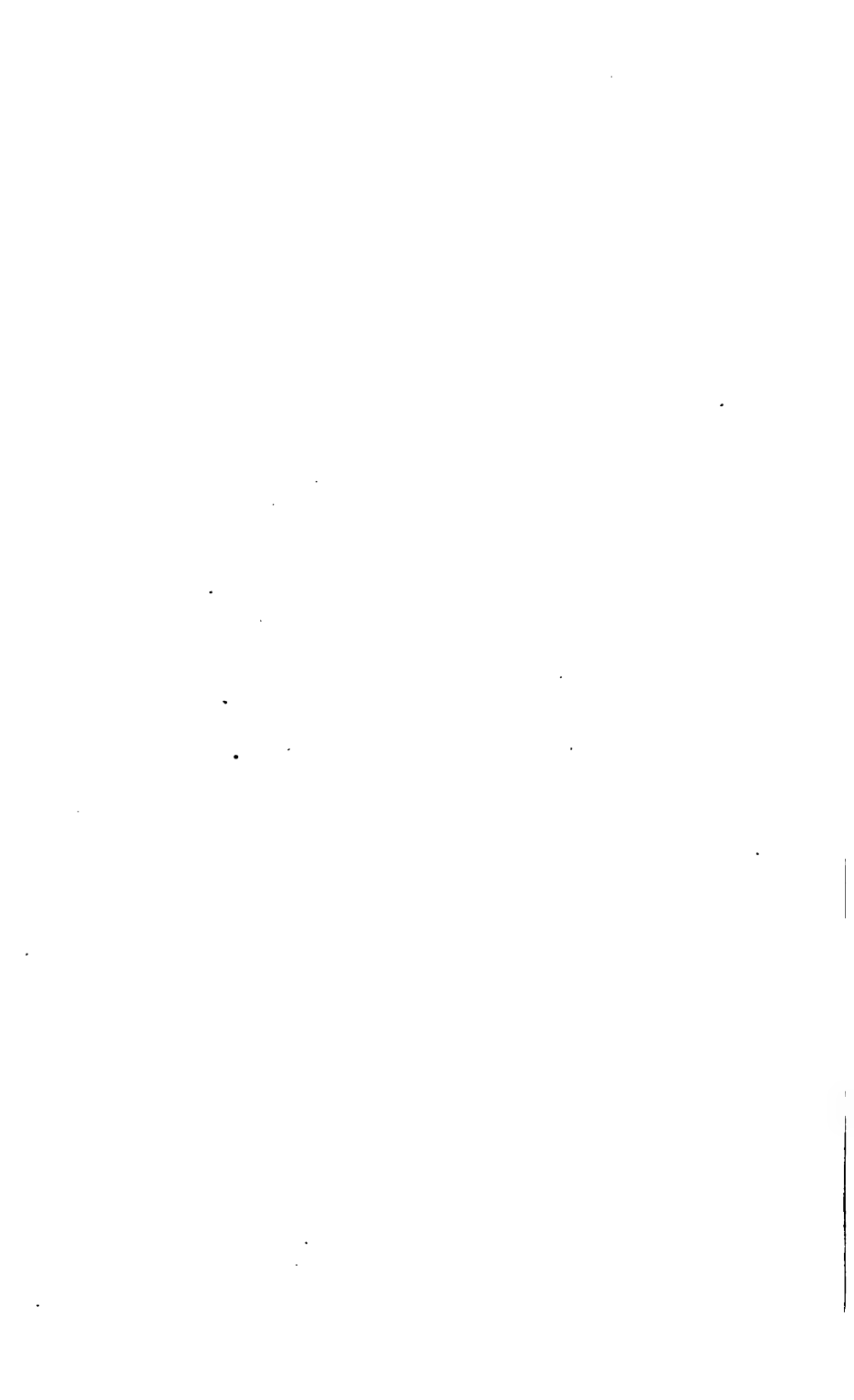
of lead disease, and progresses hand-in-hand with the lead cachexia, whereas this patient had not suffered from even the more ordinary manifestations of plumbism. In reference to the liability of an artist to be affected with mercurial tremor, it is to be borne in mind that the metal can easily be inhaled in a state of vapour, as it is volatile at nearly ordinary temperatures (68 to 78° Fahr.). The tremor had none of the irregularity of the muscular movement of chorea, the force and intensity of the tremulous motions were very uniform, and the rhythm very constant. Holding the hand upon the forearm of this man, one could resemble the rhythmical subsultus to the strokes of a lever raised by the revolution of a cogged wheel, so remarkably did the beats succeed each other. The muscular susurrus was much louder in the affected limb than in the opposite one, and the rapidly intermitted burring hum was extremely like what Dr. Stokes compared it to, the sound of paddle-wheels at a distance. The tremor succeeding to several convulsive seizures, and preceding loss of motor power, illustrated Romberg's statement,\* that the neurosis of motility which goes by the name of tremors or trembling, forms, as it were, the bridge which conducts from the region of convulsions to the paralyses. By some this man's condition would be called non-senile paralysis agitans, or paralysis agitans toxica. It was remarkable in the tremor being unilateral, for although there was a very slight tremor in the right hand for a short time, the phenomena would have been said by any ordinary observer to be entirely restricted to the left side. The tremor was neither of the *simple* kind, a weakness in the muscles, nor of the *convulsive* kind, spasmodic and jerking, with interrupted violent starts; but it was a steady, powerful, incessant, rhythmical vibration. He had none of the oral symptoms of mercurialism, there was neither stomatitis or ptyalism, but mercurial tremor is rarely accompanied by salivation. The advanced forms of mercurial tremor are not very commonly seen in hospital. The last well marked cases which I am aware of having been in the medical wards of the Meath Hospital, were those of a father and son, both engaged in the "silvering" of looking-glasses in Liverpool. The father found his way to the hospital, September, 1863, by some means or other, and, satisfied with the attention there paid him, expressed a wish that his son, whom he then mentioned was similarly affected, could be admitted. I gladly procured him a passage

\* Dis. of the Nervous System. Vol. ii., p. 230.



from Liverpool, and father and son soon lay in adjacent beds in the same ward. The son was twenty-one years of age, but looked about nine, and this was frequently guessed by visitors to be his age; he was a pale, dwarfed, wretched-looking, stunted creature; the tremor in his case was almost confined to the lower limbs, while the upper limbs were hardly affected, a circumstance which is quite the reverse of what is usually observed; he had nearly completely lost the power of voluntary motion in the lower limbs. He had been at the "silvering" business since he could do anything. The father had been at the trade for twenty-five years, had been obliged to give it up nine months before he came into the Meath Hospital, and had been feeling the effects of it for a year before he gave it up. The first symptom he observed was a "want of feeling" in the centre toes of the right foot, which soon extended upwards on the right side. Of late he had felt weakness in the lumbar region of the spine, and pain down the back bone. In appearance he was of middle stature, pallid, haggard, cachectic, unshorn—for he could not shave himself, and no barber would undertake to do so for him, on account of the tremor. The lower limbs were less affected than the uppers; the motions of the right arm were more violent and less under his control than those of the left; the head and tongue were affected; all his teeth had decayed within the previous two years; he drank by bringing his mouth towards a saucer placed on the table. The involuntary movements were increased whenever his attention was drawn to them, or if he was watched, or asked to do anything with his hands, or any sudden noise was made in the room; he was very easily startled. His brother, who used to sleep in the same bed with him at home, said he "shook" in his sleep. The more one tried to steady the arm by holding it, the more violently it shook. He was in an incessant quiver from head to foot, but there was nothing *rhythmical* about the movements. He was benefited by long continued full doses of opium. He mentioned that some workmen are not affected by this business, though at it for fifty years; that the naked hand was used in putting on the quicksilver; that the rooms were filled with a black dust which was inhaled; that the occupation was known by the men to be unwholesome; and that they were refused admission into "societies."

Although in the case of the painter it is more probable that the tremor originated rather from the effects of mercury than from lead, on account of the much greater frequency of mercurial





W. H. & C. L. Dublin

MR WHEELER ON AMPUTATION THROUGH THE SHOULDER JOINT.

than of saturnine tremor, from the absence of severe or even of marked symptoms of lead poisoning, and from his being more exposed, in his own opinion, to the absorption of mercury than of lead, yet there is a case remarkably similar in several respects, especially in the benefit derived from hemlock juice, reported by Dr. Harley,\* and in which lead appears to have the poisonous metal. A smith, using white lead in making iron fittings, with a faint blue hue along the margins of the gums, had a violent tremor of the left arm, affecting the entire limb from the shoulder to the wrist; with the thumb hooked in the trousers' pocket in order to steady it, the hand vibrated to and fro 130 times in a minute. He was able, by means of a strong effort, to check the motion for a few seconds. There was, however, no loss of power, the left grasp being as strong as the right, and he could raise fifty-six pounds with the left hand readily. He was treated with large doses of hemlock juice, such as 3v. twice a day, and occasionally single doses of 3vj. or 3viij. The improvement was manifest and decided.

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ART. XI.—*Surgical Reports:—Successful Amputation through the Shoulder-Joint.* By WILLIAM I. WHEELER, M.D., Trinity College, Dublin; L.R.C.S.I.; Licentiate of the King and Queen's College of Physicians; Surgeon to the City of Dublin Hospital; Lecturer on Clinical Surgery; Demonstrator of Descriptive and Surgical Anatomy at the School of the Royal College of Surgeons.

PRIMARY amputation through the shoulder-joint being of rather uncommon occurrence in civil practice, has induced me to publish briefly the following interesting case:—

Thomas Cronnally, aged twenty-five years, was admitted into the City of Dublin Hospital, under my care, about five o'clock on the evening of the 7th of January of this year, suffering from a compound, comminuted, complicated fracture of left humerus. It appears he was engaged as a labourer on the Kingstown pier, and on the above-named evening was pouring some oil on the wheels of a steam crane, when the sleeve of his coat caught in the cogs of the wheels, and forcibly dragged in his arm, nearly tearing it from his body.

\* The Old Vegetable Neurotics, p. 46.

*Condition of Limb.*—There was an extensive laceration of the soft parts from just below the elbow-joint to almost the acromion process of the scapula, the arm being more torn on the lower and internal than on the upper and external aspect. The brachial artery was completely severed in three places; the cephalic vein and median nerve were torn across; the bone was broken in four places; the highest fracture being about one inch below the tuberosities, the lowest about an inch and a-half above the elbow-joint. The hand was uninjured, and forearm also, except at its upper portion (*vide* accompanying lithograph, Plate VI.).

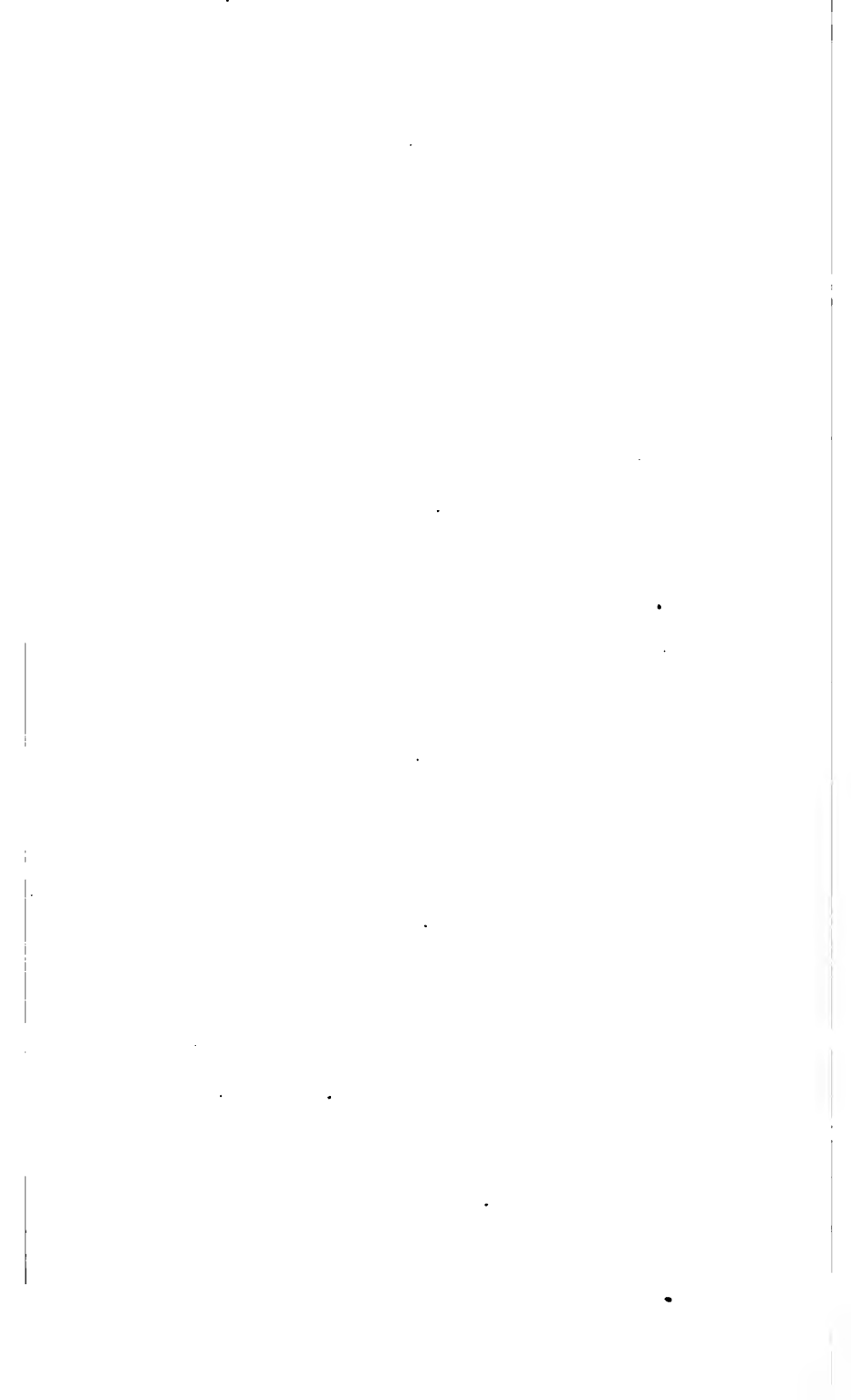
When I saw him, about three-quarters of an hour after admission, he was in a state of collapse, his pulse quick and feeble; there was some blood trickling from the torn vessels. I ordered warm jars to his feet, and some whiskey and water, and applied a piece of bandage, with a cork stitched in the centre, round the armpit, the cork pressing on the axillary artery, having knotted the ends firmly above the shoulder. This controlled almost entirely the hæmorrhage, which had continued comparatively freely, considering the lacerated state of the vessels. On account of the excess of the shock I deemed it expedient not to remove the limb immediately, and ordered stimulants to be carefully administered. At half-past nine o'clock, the patient having considerably recovered from his former exhaustion, I proceeded to operate, having first put him under the influence of ether, the time occupied in procuring anæsthesia being ten and a-half minutes, and the amount used five ounces, the period he was completely under its influence being sixteen and a-half minutes, and the temperature being about 60° F.

The subclavian artery being compressed, I commenced by making an oval incision, having the deltoid muscle for a flap, and through an opening in the capsular ligament passed in two of my fingers, and turned out the head of the humerus, dividing the attachments to the greater and lesser tuberosities, and then, keeping my knife closely applied to the bone, I made a second flap, corresponding to the one already formed, the axillary artery having been seized along with the flap by an assistant before dividing it. I did not remove any cartilage that may have been attached to the glenoid cavity, such being unnecessary. The axillary artery was tied at once, but some difficulty was experienced in securing two scapular vessels. The ligature used was silk. Some slight hæmorrhage continued after the deligation of the arteries from an angle of the wound posterior to the glenoid cavity of the scapula, which was plugged



Engraved by J. H. Deane

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with lint steeped in carbolic oil, and having shortened some cords of the brachial plexus of nerves, I brought the flaps together with points of suture. If any synovial fluid happened to be secreted, there was sufficient aperture for its escape. I preserved a portion of integument which had been bruised, in hopes that it might recover its vitality. A pad was now placed over the stump, and a roller bandage kept it in position. The patient was put to bed, with hot water jars to his feet, and ordered thirty minims of tincture of opium. At two o'clock a.m. I saw him again; his pulse was 120 per minute; there was some slight oozing from the angle of the wound, which was plugged, consequently I placed a compress over the dorsum of the scapula, beneath the spine, which stopped the hæmorrhage.

*Daily Notes.*—He got about two hours sleep after the operation; pulse 125 per minute; ordered ice to suck, claret and beef-tea. During the day he slept about four hours. At ten o'clock, p.m., he was better, and complained of headache. Ordered thirty grains of hydrate of chloral.

9th.—Pulse 120, has considerable pain in stump. Compresses, which were applied over scapula, removed; ice, claret, and beef-tea, continued.

10th.—I opened the stump, which was looking healthy, and took off the dressings; the plugs were taken out of the angles of the wound, and the stump was dressed with carbolic oil. I visited him at nine o'clock p.m., and ordered a chloral draught.

11th.—Has slept well after his draught, but complains of some uneasiness over region of abdomen, bowels not having acted for four days. Ordered aperient pills, to be followed by an enema if necessary.

12th.—Patient had a good night. The medicine prescribed had the desired effect. One of the ligatures applied to the scapular vessels separated and came away in the dressing.

On the 15th another ligature came away.

7th February.—The axillary ligature became detached. The portion of integument I endeavoured to preserve sloughed away. The stump looks very healthy; patient ordered chicken for dinner, and a mixture as follows:—

*R.*—Sulphatis quiniæ, grana xxv.

Acidi sulphurici diluti, 3ss.

Aquæ destillatæ, ʒvi. M.

Capiatur cochleare amplum ter quotidies.



8th.—Ordered to get up for two hours.

From this date he gradually gained strength till he was discharged on the 1st of April perfectly recovered; and, notwithstanding the mutilated condition of the limb, and the consequent difficulty of procuring suitable flaps, there is a well-covered stump (*vide* lithograph, Plate VII.)

Considering the severity of disarticulating the shoulder-joint, the results are tolerably successful. In the Crimea the mortality was thirty-five per cent, but according to Dr. Gross, out of sixty-one cases occurring in American and European hospitals, there was a mortality of nearly fifty per cent. Whereas Ashhurst, quoting from Circular, No. 6, states the mortality to be thirty-nine and a-quarter out of two hundred and thirty-seven cases, and that when performed for other than traumatic causes, it is still more successful. In operating at the shoulder-joint for injury, the surgeon must select that method by which he can obtain the best flaps, and not be partial to any particular one. For this reason I selected the operation above described, in preference to Larrey's, or transfixion.

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ART. XII.—*Cases of Orbital Disease.* By H. MACNAUGHTON JONES, M.D., M.Ch., Fellow of the Royal Colleges of Surgeons, Ireland and Edinburgh; Surgeon, Cork Ophthalmic and Aural Hospital; Senior Demonstrator of Anatomy, Queen's College, Cork, &c., &c.

THERE can be no doubt of the intractable nature of many cases of accumulation of pus in the frontal sinus. Mr. George Lawson has drawn special attention to this affection, and, with his usual skill, has proved how successfully it may be treated by a drainage-tube passed from the sinus into the nose and out through the nostril (*vide Practitioner*, July, 1870). This, undoubtedly, is the most correct and effectual method of curing the disease, for it offers at once a natural passage through which the pus can gravitate, at the same time that it affords a ready means of syringing out the cavity with any disinfectant fluid we choose to employ, and, also, the difficulty of keeping an opening in the soft parts for a long time patent, is obviated. The great displacement of the eye, the interference with normal vision, the swelling, are the prominent symptoms





which we recognize in old-standing cases of this affection—all these are completely combated by the drainage-tube and the operation proposed by Mr. Lawson. But occasionally we meet persons who will not submit to this plan of treatment. There is no doubt that the unpleasantness of wearing a tube is great, and shuts out the patient from society for the time during which it has to be worn.

In both the cases I am about to describe, the disease had been of old standing; neither would allow me to operate and insert the tube. In No. 1, I had the advantage of having my opinion strongly endorsed by Mr. Streatfield, who was in communication with me in reference to the case.

*CASE I.—Frontal Abscess and accumulation in the Frontal Sinus, resulting in Destruction of portion of the Roof of the Orbit, and extending to the Dura Mater.*—Mr. J., aged fifty-nine years, consulted me for epiphora, in January, 1871. *History*—Several years since operated on by Mr. Butcher, successfully, in the presence of Mr. Cusack, for a tumour over the eye, which he thinks was of a cystic nature; the eye has lately become more depressed, and the vision not so good as formerly. The patient suffers from diplopia, and has to close the sound eye to see objects well, as otherwise he gets a double image. He says he has then to look up to enable him to see an object distinctly. He never had the least pain, there was no fulness over the lachrymal sac, and, on examination with a probe, I found but a slight obstruction in one canaliculus; the upper lid drooped, and there was a slight adhesion and puffiness of the lid, which was marked by the remains of an old cicatrix where the original operation had been performed. His health had been otherwise good for years; he lived freely, and complained of nothing save an old chronic psoriasis of the scalp, which occasionally burst out, and from which he was suffering when I saw him. When he first consulted me I was inclined to attribute the changes in the position of the organ and the fulness in the lid, to the ulterior results of the previous operation, and considered that the watering of the eye might be due simply to obstruction in some portion of the lachrymal apparatus. I accordingly advised that I should operate, and slit up the canaliculus, and pass a probe into the canal, thinking that if any accumulation connected with the sac existed in the orbit, I would come on it in this manner. This, or any other operation at

the time, he would not consent to, though I pressed him much to allow me. Not long after he got an accute attack of eczema of his face, scalp, and ears, which was very severe, and he also passed a gall-stone, from which he suffered intensely. I attended him, and was surprised to find that one day he got a profuse discharge of purulent matter from the nose, increased by pressure on the ball of the eye, and coming away in quantities when he blew the nose. The eye now began to water constantly. It was with great difficulty I persuaded him to permit me to perform any operation; however, on the 8th of April I opened up the sac, from which a quantity of foul, purulent matter came. I immediately enlarged the opening with a bistoury freely, and evacuated a quantity of the most foetid discharge, of a semi-transparent, slimy nature, and on examining with a probe, I found that the bone was extensively diseased. On pressing on the ball of the eye a large quantity of foul, purulent, and gelatinous discharge came, and I found the probe passed far upwards into the orbit and into the frontal sinus. For some few days I kept the wound well open, but on the third day the previously copious discharge ceased, the eyelid and brow began to swell, and he got an attack of erysipelas in the side of the face and head. On the 25th of April, under appropriate treatment, he had got much better of this complication, and as I was obliged to go to England for a few days, I left the case in Dr. Cummins' hands until my return. During my absence the wound was kept as well open as it was possible. Already there was a tendency to contract greatly, and accordingly I advised on my return, conjointly with Mr. Streatfield (to whom I had spoken of the case when in London), that he should have a drainage-tube passed, and a proper communication established. This he would not listen to, so I had no alternative but to insist on making a free incision into the orbit at its inner angle, and parallel with its upper margin, hoping that I would be able to devise some plan of keeping this open, and certain that an extensive cavity existed filled with pus, which might, if not evacuated, give rise, after so long a period of incarceration, to dangerous results; accordingly, by the aid of chloroform, on the 10th of June (with Drs. Cummins and Grattan) I did so, and evacuated a large quantity of the most foetid pus mingled with gelatinous discharge. I then examined the cavity carefully, having first syringed it through an Eustachean catheter, which was most convenient, as I was enabled to turn it in all directions inside. I

that the roof of the orbit was partly destroyed, a large

ragged communication existing between the orbit and the frontal sinus. The catheter easily passed in to the extent of three inches, and I could turn the curved end completely round. The following day I passed a self-retaining winged catheter into the cavity through which the fluid drained, and I had the cavity syringed out twice daily with permanganate solution. I found, on watching the flow of pus, that it welled up to the orifice of the wound with each cerebral pulsation, and with these pulsations there continued all through, while the discharge lasted, a constant synchronous rise and fall of the fluid at the opening. This I attributed to the cavity communicating with the dura mater. The winged catheter was now kept constantly in, and the wound enlarged daily with a probe. Weak solutions of carbolic acid were alternated with the permanganate, and the cavity well cleared out twice daily. He suffered on two occasions from rigours, followed by hectic and severe constitutional disturbance, with vomiting; and on the 18th of July, when everything appeared to be going on favourably, he got a severe febrile attack with an erythematous blush all over the scalp, which I was afraid would eventuate in general erysipelas. By the aid of salines, iced drinks, and diaphoretics, this subsided. After each of these attacks there appeared to be a fresh secretion of pus internally, judging from the character and quantity of the discharge. He was now taking iodide of potassium and liquid extract of cinchona, and this he continued for a length of time. The opening now began to contract gradually, notwithstanding that I slightly enlarged it on one or two occasions, and daily used the probe and catheter. I accordingly saw that before long the sides of the flexible and soft catheter would be encroached on, and the exit of pus prevented. On the 30th of July, the discharge of pus having greatly decreased, and there being no return of any bad symptom, I put in a tube, of the pattern figured, ordered by me from Messrs. Matthews, of London, a small silver canula (and subsequently a gilt one), one inch and a half long, through which passed two diverging blades of spring-steel, united below, and the distance of the wings at the orifice from each other, as also the extent of their protusion, being regulated by a screw handle. This acted as a holder, and kept the canula in position.



The tube was easily withdrawn by the patient himself, or the cavity syringed out through it, on the removal of the central

piece, by simply pressing in the tube and withdrawing the holder. He continued to do well, and on the 28th of August I made the following note in my case-book:—"Pus almost completely disappeared; a mere sign twice daily. Wearing tube, able to go about with protectors, and enjoy himself; using at present one grain nitrate of silver solution, and permanganate alternately." On the 1st of September, there being no apparent discharge of purulent matter, and the eye having perfectly returned to its normal position, I determined to remove the tube and let the opening heal.

I saw him again on the 4th; there was no pain; he said he felt quite well. On the 7th he went yachting, remaining out until late. On the 8th he came to me with a slight discharge of pus from the wound, which had now nearly completely closed. I immediately freely re-opened the wound (under nitrous oxide gas, given by Mr. Corbett, junior); a quantity of pus had evidently re-formed, and this was evacuated. From this out he got on very well. Though the discharge of matter had almost completely ceased on the 25th of September, save a slight flocculent sign, which always came after syringing, I did not again remove the tube, which now remained in without difficulty, and required no catch to support it. He alternately wore the gilt tube, or the end of a winged catheter. The vision was completely restored, and is now perfect. He enjoys better health than he has had for many years. The eye itself has returned to its normal position; the pupils are on the same level. (See Plate VIII., Fig. 1.)

The photograph was taken early in 1872. He still wears the tube, as at times there is a very slight appearance of a discharge, after which he syringes with a mild carbolic solution. He is in perfect health, and his vision is excellent. The following letter shows his present condition:—

"ALMA VILLA, BALLINTEMPLE,

"CORK, August 16th, 1873.

"MY DEAR DR. JONES,—I desire to inform you that my eye has now, and for the last fifteen or eighteen months, completely returned to its former position. The vision is excellent. I enjoy the best of health, and, but that I am nervous lest any of my former troubles should return, I could, with safety, remove the small tube. This, however, does not prevent me enjoying a good bout of my favourite game of whist, or to take my accustomed cruise in my yacht. When in town next I shall call to see you. Yours ever sincerely,

"GEORGE JOHNSON.

"H. M. Jones, Esq., M.D., Camden-place, Cork."







CASE II.—James T., aged forty-six, a carpenter, came to the Ophthalmic Hospital, on the 1st of April, 1871. He was able to count fingers and discern objects; he could read twenty Snellen at fifteen feet; his vision was diplopic. The eye was much displaced, being pushed upwards and outwards, and situated quite obliquely in the orbit, causing great disfigurement. There was a large swelling at the inner angle of the orbit, filling it up, above two inches in circumference. This swelling had lasted for about two years, and gradually increased to its present size, the eye being pushed entirely out of position as it increased. I had a drawing of the eye taken at the time. (See Plate IX., Fig. 2.)

He would not consent to any operation, and it was with difficulty I persuaded him to allow me to freely open the abscess, by a deep incision over the extent of the tumour. I evacuated a large quantity of pus, and found that the probe had extended a long way back into the orbit, and, as I anticipated, the bone was carious and necrosed. The fluid which came had a very foul odour, and was characteristic of diseased bone. I treated this case in the same way as the preceding. He attended the hospital for about three months. I kept the wound open by means of the constant syringing out of the cavity through an Eustachean catheter, and pieces of linen saturated with chloride of zinc solution, which I passed into it. By the repeated cleansing out of the cavity with solution of permanganate of potash or chloride of zinc, I succeeded in finally arresting all discharge; the cavity gradually narrowed, and I allowed the wound to heal in about three months from the time he applied. The photograph was then taken as represented in the drawing, and he had since continued at his employment, and his vision is perfectly restored. (See Plate IX., Fig. 3.)

CASE III.—*Melanosis of the Orbit*.—Mrs. R., widow, aged fifty, consulted me in August, 1869; then had a sightless ball, and only a vestige of cornea, greatly enlarged and prominent, with a peculiar elastic feel, giving the sensation of a large cystic tumour; lids movable, but partly adherent, especially the lower; the ball slightly movable, and discoloured from the action of the nitrate of silver; no pain generally, but at times—attendant on sudden changes in the atmosphere—pain of an excruciating character comes on, which stretches to the side of the head and brow; her general health at present good.

*History*.—Right eye affected for the past eight years; commenced after cold, and she was treated several times for attacks of inflan-

mation by leeches. Two years since the eye began to increase in size, and of late has grown more rapidly. Left eye perfectly healthy, naturally myopic, and dark pigment in iris. I advised immediate removal of the diseased ball, suspecting the disease to be of a malignant nature; she hesitated, and I did not again see her until the 17th of October (Sunday), when I was hastily summoned to her residence in the country, with a report that she was alarmingly ill. Frost had set in during the past few days, and the bad symptoms had supervened. I found her unable to speak, with a rapid and weak pulse, and for the preceding twenty-four hours she had been attacked with purging and vomiting; she begged for immediate operation. I returned home, and bringing with me Drs. Cummins and Grattan, I proceeded to remove the diseased mass, uncertain as I was of the nature and extent of the disease. She was thoroughly under chloroform. Immediately on freeing the adhesion which partly bound the upper eye-lid, and opening the conjunctiva, a quantity of black, gelatinous, melanotic matter burst out, of almost fluid consistency, and we at once recognized the terrible form of disease we had to deal with. I immediately enlarged the palpebral aperture, and freed the lids; then, with scissors and scalpel, I removed the ball and the contents of the orbit, until I cleared it out as far as possible, owing to the extremely severe hæmorrhage. The disease had evidently attacked chiefly the upper and back parts of the orbit, in which places it was of a firm consistence. The patient lost a considerable quantity of blood, and this continued for some time after I had ceased to operate; however, by pressure, and the use of perchloride of iron, it was arrested (I had no cautery with me at the time). The orbit was now plugged with pads soaked in strong perchloride solution, and we left the patient in very little pain, Dr. Grattan keeping her under the influence of chloroform for some time after the operation; all subsequent pain was relieved by opiates, and the application of iced bags to the temple and brow; suppuration set in, and the plugs were removed about fifty hours after the operation; the orbit was syringed out with strong chloride of zinc and carbolic acid injections. The sloughs gradually separated with poulticing, and there appeared a fair granulating surface underneath. She progressed rapidly in her general health and spirits; the lids fell in, and finally became adherent. About three months after the operation, I brought her case before the Cork Medical Society,

making these remarks:—"Her personal appearance is greatly improved; she is able to attend to her domestic and business affairs (which, as she has a large family, is of great importance to her); her general health and spirits she asserts, 'are better than they have been for a long time previous to the operation.'" I need not say that, knowing the nature of the case, I did not expect more than a merely temporary and palliative relief, and as the subsequent history of it will show, the anxiety with which I used to look forward to her future state of health was not without a cause. I ceased to visit her early in November, 1869. For the next six months I saw her but seldom, and there was no change of any importance in the condition of the affected part; she managed all her business affairs, the only thing being that on two or three occasions she exposed herself to cold, going about her farm, and got a return of the old neuralgic pain in the seat of the tumour. She went to the sea-side in the summer of 1870, and her general health improved greatly; she came to me, during this time, once or twice, and I was sorry to perceive that there was a decided tendency to re-growth, and prominence of the lids, with slight pain on pressure; however, she continued fairly until the 20th December, when she got sudden pain from exposure to cold. The part was greatly swollen on my visiting her; leeches, ice, chloral, and opiates, gave her relief, and the swelling partly subsided, but from this out there was a slow but steady growth from the orbit, accompanied at times with great pain, which nothing relieved but chloral in small and repeated doses. The tumour gradually increased, until, in April, 1871, it assumed the size and appearance depicted in the drawing. (See Plate VIII., Fig. 4.)

It was then soft and fluctuating to the feel, especially round the superior border of the orbit. It had in parts a dark livid appearance, and large veins covered its surface. It encroached on the nose and temple, and the pain was occasionally relieved by profuse hæmorrhage from the adjacent nostril. She now became anxious for re-operation, which I was, at first, totally against, and explained to her and her relatives, fully, the hopeless nature of any such step, and that at best it could give her only temporary relief. However, the pain became unbearable, and, unless when under the influence of chloral, her screams and agony were most distressing to all around her. I was most unwilling to assume the entire responsibility of the case, and as I was going to London, for my holiday, about this time, I took a drawing of the tumour with me, and

consulted a few friends there on the desirability of an operation. They, as far as they could judge (without actual observation of the patient), were in favour of giving her a chance, *if she desired* it, of prolonging life and obtaining relief from pain. She pressed urgently for operation on my return, the pain becoming, if anything, more agonizing, and the tumour enlarging. Just then I received (in reply to a letter of mine on the case) a communication from my friend, Mr. Streatfield, in which, after stating his opinion as to the certainty of return, he also advised operation—"seeing that her health was otherwise good, and to give her another remission from pain." On the 28th of May, over one year and seven months after the first operation, Drs. Cummins, Curtis, and Grattan assisting me, I, by two oval incisions, removed the tumour, about the size of an orange, which completely filled the orbit, and was of a distinctly cystic nature, being enclosed by a firm envelope, the entire tumour shelling out. The bleeding was arrested by the actual cautery, which was freely applied to the raw surfaces, the orbit then dressed with pieces of lint soaked in chloride of zinc paste. On removal of the tumour a fungoid mass was found protruding from the ethmoid bone, the orbital plate of which, and a portion of the frontal, were completely gone. Pain entirely subsided after the operation, from which she recovered well. She was supported freely by iced drinks, beef-tea and wine, and for two days she took one grain of opium every four hours. She would not permit the chloride of zinc paste to be applied to the raw surfaces, as I desired, and I had to be satisfied with strips of linen, soaked in chloride of zinc and carbolic solution, placed in the orbit.

There was now little or no pain; but the fungoid growth, from the inner wall of the orbit, increased rapidly, and was attended by an occasional sanious discharge from the right nostril, and also from its surface. Matters continued thus until the 30th of June, when there was sudden profuse hæmorrhage, and also a discharge of purulent matter from the growth. She had now for some time cessation from severe pain, until the 25th of August, when I again saw her. The tumour had in the meantime increased enormously, projecting from the orbit, and pushing the nose aside, a huge "*fungus hæmatodes*," which had become intensely painful, and which at times bled profusely. The hæmorrhage partially relieved the pain, assisted by subcutaneous injections of morphia, administration of chloral, and iced bags applied to the forehead and

temple. She finally sank in September, 1871, about one year and eleven months after the date of the first operation.

This case is instructive in some particulars. It adds one more to the list of those which prove the absolute necessity of early, *very early* operation in cases of suspected malignant disease; its slow growth; the comparative freedom from pain for a long period; the mobility of the ball; the freedom of the lids; and the absence of external signs of the disease, were uncommon in a case of such extensive malignancy. The disease did not at any time appear to attack any other organ, as her general health remained fair, until at last she succumbed to the continued pain. The advantage of operation (irrespective of all personal considerations), even at the eleventh hour, was manifest, inasmuch as it was after the last operation that she was enabled finally to arrange her affairs, which were much confused, and to leave her orphan children beyond the power of litigation. To relieve suffering, to prolong life, are two great objects to be gained by any operation, and certainly in this instance both were attained.

CASE IV.—*Epithelioma of Orbit.—Removal of Contents.*—Jeremiah S., aged sixty, admitted to the Cork Ophthalmic and Aural Hospital on the 9th of September, 1870. *History.*—From the time he was three years of age he had a small red pimple at the outer margin of the orbit; about three years since he noticed it enlarging, and then it rapidly spread. He was treated for the growth in various ways by several medical men in America. It quickly attacked the eye, and it is now over twelve months since he had the least vision in the affected ball. He presented himself to me in a state of horrible deformity; the greater part of both lids was completely destroyed, especially the lower; there was a great chasm between the ball and the inferior margin of the orbit; it had lost all power of motion, and I was barely able to discern the situation of the cornea; the skin round the orbit was partly involved, especially at the outer margin; in short, the whole orbit presented to view an unsightly red mass, the disease evidently extending deeply, involving all the muscles, some of which were completely destroyed. Lately he has suffered some pain, and his general health is declining. On the 9th of September, Dr. Grattan having placed him well under chloroform, I removed the whole contents of the orbit, completely clearing it out, and also removing the diseased portion of integument and tissues at its edges. I then

lightly ran the actual cautery over the whole, and filled the orbit with pledgets of lint, soaked in chloride of zinc paste. He then got a full dose of chloral, and from his admission until his departure from hospital he suffered no pain. The sloughs separated with carbolic poultices in some days. He was up the following day in the ward, and was permitted to walk about outside on the third day after the operation. Healthy granulations sprung up, and he left the hospital on the 28th of October, the interior of the orbit, the cavity of which had a good deal contracted, presenting a healthy smooth surface, the only part which had anything of a suspicious appearance being the outer margin; here the integument looked vascular and thickened. While in hospital he was syringed out daily with chloride of zinc and carbolic acid solution, and the orbit dressed with carbolate of zinc ointment.

Since writing the above, I have managed to trace this patient, who lives a long distance from the city. I learn that the disease has again made its appearance, extending not so much in the orbital as in the temporal direction and on the face. His health, however, is good, and he suffers no pain.

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ART XII.—*Three Thousand Cases in Practical Medicine. An Analysis, with Remarks.* By RICHARD J. HALTON, Licentiate of the King and Queen's College of Physicians; Licentiate of the Royal College of Physicians, Edinburgh; Licentiate of the Royal College of Surgeons, Ireland; Licentiate in Midwifery and Diseases of Women, King and Queen's College of Physicians, Coombe Hospital, &c.; Medical Officer to the Kells Dispensary, and Medical Officer of Health to Kells.

IN compiling the present paper I have had it principally in view to give a list of all the diseases met with during two years in the practice of the Kells Dispensary District, distinguishing those which occurred with most frequency; and as some diseases had come under observation in private practice which did not happen to occur in those years in the dispensary, I thought a list of them might not be without interest. I have selected reports of a few cases out of many hundreds carefully written, which may serve as specimens of some of the common forms of disease of every-day occurrence in country practice. I have detailed shortly the treatment pursued, and accurately recorded the results.

*Cases in Kells Dispensary District for the Year 1871 (alphabetically arranged).—Total Number, 1,716.*

	Jan.	Feb.	Mar.	April.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Anæmia, - - - -	-	1	-	-	-	-	-	-	1	-	-	-
Ascites, - - - -	-	-	-	-	-	-	-	-	-	-	1	-
Anthrax, - - - -	-	-	-	-	-	-	-	-	-	-	-	1
Abscess, - - - -	3	3	1	1	8	6	1	1	4	1	4	1
Abortion, - - - -	-	1	1	-	-	-	2	-	2	1	1	1
Amenorrhœa, - - -	1	6	-	-	4	-	3	1	4	1	-	5
Bronchitis, - - -	54	35	21	14	22	11	10	12	7	10	21	32
Bronze skin, - - -	-	1	-	-	-	-	-	-	-	-	-	-
Bursitis, - - - -	-	-	1	-	-	-	-	-	-	-	-	-
Boil, - - - - -	-	-	-	-	-	-	1	-	1	-	-	1
Burns, - - - - -	1	1	2	-	-	-	-	2	3	1	-	1
Cancer of breast, -	-	-	-	1	-	-	-	-	-	-	-	-
Chlorosis, - - - -	-	-	-	-	-	-	-	-	1	-	-	-
Cataract, - - - -	-	-	-	-	-	-	-	-	-	-	-	1
Chorea, - - - - -	-	-	-	-	1	1	1	2	-	-	-	1
Catarrh, - - - - -	3	4	2	-	-	-	-	-	2	4	17	7
Colic, - - - - -	-	-	-	-	-	-	-	-	-	1	1	1
Constipation, - - -	13	7	5	5	9	8	9	9	11	2	1	3
Contusions, - - -	4	1	1	-	2	5	6	-	5	-	-	-
Dying when first seen,	-	-	-	1	1	-	-	-	-	-	1	1
Dislocation of elbow,	-	-	-	1	-	-	-	-	-	-	-	-
Deafness, - - - -	-	1	-	1	1	-	-	-	1	1	1	-
Dyspepsia, - - - -	17	18	18	18	20	9	31	24	16	9	11	16
Diarrhœa, - - - -	2	3	5	-	3	5	7	4	3	6	3	1
Debility, - - - -	4	6	8	3	6	5	3	1	-	5	3	5
Dysmenorrhœa, - - -	-	1	-	-	-	-	-	-	-	-	-	-
Delirium tremens, -	-	-	-	-	1	-	-	-	1	-	-	-
Enteritis, - - - -	-	-	-	-	-	-	1	-	-	-	-	1
Eczema, - - - - -	2	3	2	2	3	-	1	-	-	1	1	-
Excoriation of os uteri,	-	-	-	1	-	1	1	-	1	-	-	-
Excoriation of lip, -	-	-	-	-	-	1	1	-	1	-	-	-
Ear-ache, - - - -	-	-	1	-	1	-	-	-	-	-	-	-
Erysipelas, - - -	-	-	-	-	1	-	-	-	-	-	-	-
Epilepsy, - - - -	-	1	-	-	1	-	-	1	-	-	-	-
Enlarged tonsil, - -	-	-	-	-	-	-	-	1	-	-	-	-
Epithelioma of lip, -	-	1	-	1	-	-	-	1	1	-	-	-
English cholera, - -	-	-	-	-	1	-	-	-	-	-	-	-
Fever—Feverish cold,	2	1	-	-	-	-	-	-	2	-	2	2
" Febricula, - - -	6	1	4	3	4	7	1	7	1	1	2	-
Fracture of lower jaw,	-	1	-	-	-	-	-	-	-	-	-	-
" femur, - - - -	-	-	-	-	-	-	-	-	-	-	-	1
" rib, - - - - -	1	-	-	-	-	-	-	-	-	-	-	-
" ulna, - - - - -	-	-	-	1	-	-	-	-	-	-	-	-
" nasal bones, - -	-	-	-	-	-	-	-	-	-	1	-	-
" clavicle, - - - -	-	-	-	-	-	-	-	-	-	-	1	-
Gastritis (sub-acute),	-	1	-	-	-	-	-	-	-	-	-	-
Gastrodynia, - - -	-	-	-	-	-	-	1	-	4	-	-	1
Gonorrhœa, - - - -	-	-	1	-	-	-	-	-	-	-	-	-
General dropsy, - -	-	1	-	-	-	-	-	-	1	-	-	1
Head-ache, - - - -	-	3	-	-	3	1	1	-	-	1	-	1
Hoarseness, - - - -	-	-	-	-	-	-	-	1	-	1	-	-
Hemicrania, - - - -	-	1	-	-	-	-	-	-	-	-	-	-
Heart disease, - - -	2	1	-	-	-	-	2	-	1	-	1	1
Herpes, - - - - -	-	-	1	1	-	1	1	-	-	-	1	-
Hernia, - - - - -	3	1	1	1	2	3	-	1	1	-	1	-







## Cases in Kells Dispensary District—continued.

	Jan.	Feb.	Mar.	April.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Fever, febricula, . . . . .	4	-	2	6	8	5	3	2	3	1	2	4
Fracture of lower jaw, . . . . .	-	-	-	-	-	-	-	-	1	-	-	-
"    femur, . . . . .	1	-	-	-	-	-	-	1	-	-	-	-
Fracture of rib, . . . . .	-	-	-	-	-	1	-	-	-	-	1	1
Gastrodynia, . . . . .	2	3	2	3	2	2	3	3	1	2	3	2
Gonorrhoea, . . . . .	-	-	-	-	-	-	-	-	-	-	1	-
Head-ache, . . . . .	-	-	-	1	-	-	-	3	2	-	-	-
Heart disease, . . . . .	-	1	2	1	2	1	-	-	-	-	-	-
Herpes, . . . . .	-	-	-	1	-	-	1	-	1	-	-	-
Hernia, . . . . .	1	-	1	-	1	-	-	1	-	-	2	-
Hysteria, . . . . .	2	2	2	-	-	2	-	1	-	1	-	-
Hives, . . . . .	-	-	1	-	-	-	-	1	-	-	-	-
Hæmorrhoids, . . . . .	-	1	-	-	-	-	-	-	-	1	-	-
Hemiplegia, . . . . .	-	-	-	-	-	1	-	-	-	-	-	1
Hæmoptysis, . . . . .	-	-	-	-	-	-	-	-	-	1	-	-
Inflammation of upper jaw, . . . . .	-	-	-	1	-	1	1	1	3	-	4	-
Influenza, . . . . .	-	1	-	-	-	-	-	-	1	3	3	1
Irritation of bladder, . . . . .	-	-	-	-	-	-	-	-	-	-	-	1
Insomnia, . . . . .	-	-	-	1	-	-	-	-	-	-	1	1
Leucorrhœa, . . . . .	1	2	3	1	1	2	1	2	-	-	-	-
Labour, . . . . .	2	2	2	3	2	4	3	-	-	2	2	1
"    retained placenta, . . . . .	-	-	-	-	3	1	-	-	-	-	-	-
"    post-partum hæmorrhage, . . . . .	-	-	-	-	-	-	-	-	-	-	-	1
"    partial placenta previa, . . . . .	-	-	-	-	-	-	-	-	-	-	1	-
Lumbago, . . . . .	-	-	-	-	-	2	-	-	-	1	-	-
Mastitis, . . . . .	-	1	-	-	-	1	-	-	-	-	-	-
Menorrhagia, . . . . .	1	3	1	1	1	-	2	-	-	1	1	1
Melæna, . . . . .	-	-	-	-	-	-	-	-	-	-	1	-
Mania, . . . . .	-	-	-	-	-	-	1	-	-	-	-	-
Melancholia, . . . . .	-	-	-	1	-	-	-	-	-	-	-	-
Neuralgia, . . . . .	2	2	3	-	-	-	-	1	1	-	-	-
Neurosis, muscular trembling, . . . . .	1	-	-	-	1	-	-	-	-	-	-	-
Nephritis, . . . . .	-	-	-	-	-	-	-	-	-	-	2	-
Nothing, . . . . .	1	4	-	3	1	-	-	1	-	-	-	3
Ophthalmia, . . . . .	2	3	2	3	8	3	2	2	2	-	3	2
Otorrhœa, . . . . .	-	-	-	-	-	-	-	-	-	1	-	-
Other diseases, . . . . .	-	-	-	-	-	-	3	-	1	1	3	1
Prostate, enlarged with retention, . . . . .	-	1	-	-	-	-	-	1	-	-	-	-
Pruritus vulvæ, . . . . .	1	-	-	1	-	-	-	-	-	-	-	-
Pertussis, . . . . .	-	-	-	-	-	-	-	-	-	-	-	3
Pneumonia, . . . . .	-	-	-	-	-	-	-	-	-	1	-	-
Pleuritis, . . . . .	1	-	-	1	-	-	-	1	-	-	-	-
Phthisis, . . . . .	-	-	-	4	-	1	1	1	1	1	2	1
Pleurodynia, . . . . .	-	-	-	2	1	1	1	-	-	1	2	2
Pericarditis, . . . . .	-	1	-	-	-	-	-	-	-	-	-	-
Parotid synochia, . . . . .	-	-	-	-	-	-	-	-	-	-	1	2
Procidencia uteri, . . . . .	-	1	-	1	-	-	1	-	-	1	-	-
Prolapsus ani, . . . . .	-	1	-	1	-	-	-	-	-	-	-	1
Rheumatism, acute, . . . . .	-	-	-	-	-	-	-	-	-	-	-	-
"    chronic, . . . . .	5	8	7	11	11	1	3	10	7	3	13	6
Staphyloma, . . . . .	-	-	-	-	-	-	-	-	-	-	-	1
Short frænum lingue, . . . . .	1	-	-	-	-	-	1	-	-	-	-	-
Sweating feet, . . . . .	-	-	-	-	-	-	-	-	1	-	-	-
Syphilis (secondary), . . . . .	1	2	-	1	-	-	-	-	-	-	-	-
Scabies, . . . . .	3	7	1	6	6	3	6	2	2	2	-	1
Synovitis, . . . . .	-	-	-	-	-	1	1	-	-	-	-	-

*Cases in Kells Dispensary District—continued.*

	Jan.	Feb.	Mar.	April.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Sprains, - - - -	2	-	-	6	1	-	1	3	6	1	2	4
Scrofula, - - - -	1	2	1	2	2	1	2	-	-	5	1	1
Skin diseases (various), - - -	3	4	5	-	-	-	2	4	8	5	4	2
Senile delirium, - - - -	-	-	-	-	-	-	-	-	-	1	-	-
Sciatica, - - - -	1	-	-	-	-	-	-	-	-	-	-	-
Thrush, - - - -	-	-	-	-	1	-	-	1	2	-	-	-
Tooth-ache, - - - -	2	2	-	3	-	3	-	3	3	-	3	2
Tenesmus, - - - -	1	-	-	-	-	-	-	-	-	-	-	-
Tumours (innocent), - - - -	1	-	-	-	-	-	-	1	-	-	-	-
Tonsillitis, - - - -	1	-	3	1	1	1	1	-	-	2	2	1
Ulcers, - - - -	2	3	2	2	1	1	2	3	2	3	1	2
Vomiting, - - - -	3	1	1	-	-	-	2	1	-	1	-	-
Varicose veins, - - - -	-	-	-	-	-	-	1	1	-	-	-	-
Varicella, - - - -	-	-	-	-	-	-	1	-	-	-	-	-
Warts, - - - -	-	-	-	-	-	-	-	-	1	1	1	-
Worms, - - - -	10	20	17	17	13	16	16	15	5	4	12	-
Whitlow, - - - -	-	-	-	-	-	1	1	-	-	-	-	-
Wounds, incised, - - - -	-	2	1	-	-	1	2	1	3	2	1	-
" scalp, - - - -	-	1	-	-	-	-	-	-	-	-	-	-

NOTE.—There are several cases entered in the foregoing returns as swelled jaw, and some of them are the ordinary swelled jaw of tooth-ache or gum-boil. There are others, one or two usually occurring in spring and autumn, which, though they closely resemble an ordinary swelled jaw from tooth-ache, and might be easily mistaken for it on a superficial examination, yet present some different features of their own.

In those cases the patient is seized with shivering pain in the back and considerable constitutional disturbance. In a day or two the cheek over the superior maxillary bone swells, and the lower eyelid is cedematous. If the upper lip be raised, the alveolar gum is found to be unaffected, nor is there any history of tooth-ache. There is very severe pain complained of, with loss of sleep and appetite. If a few grains of calomel, followed by a dose or two of sulphate of magnesia, be now given, the disease often terminates. If it is not seen until later, the swelling becomes more puffy, and the pain lessens. If the upper lip be now raised, fluctuation can be detected in the little projecting swelling of the mucous membrane, which will be then found situated above the junction of the canine and molar teeth. A bistoury passed up gives exit to healthy pus, and the disease terminates, leaving great debility behind. All the cases I have seen have occurred on the left side.

*Cases occurring in Private Practice which did not happen to occur in the Practice of the Dispensary for the Year 1871-2.*

AGUE.

ANEURISM—Under inner third of right clavicle. Patient, man of fifty years of age, a blacksmith. Under observation for seven years. Disease apparently checked by large doses of iodide of potassium. All feelings of pain and inconvenience are removed by that drug, and if he leaves it off for even a short period they recur. His pupils are contracted to a pin's point. N.B.—I have just heard from his medical

attendant that the aneurism has commenced to enlarge.  
bulging out the bone and first rib.

**BITE OF FLY (POISONOUS).**

**CHRONIC EFFUSION INTO THE SHEATHS OF THE TENDONS OF  
ARM AND HAND.**

**ECTROPION.**

**EPILEPTIFORM HYSTERIA.**

**ENTERO-VESICAL FISTULA.**—Patient, a cattle-jobber, twenty-two years of age. Nearly all his brothers and sisters died of consumption. He got a severe cold travelling in England, and a popular quack there whom he consulted bled him largely. This brought on great prostration and weakness, and a fortnight after he observed *fæces* in his urine. From this time his sufferings were very great from the distention of the bladder with gas from the bowel, which passed noisily through the urethra. Both lungs rapidly broke down, and the case terminated fatally within six months of the bleeding.

**FRACTURE OF THE SKULL.**—The injury was supposed to be inflicted maliciously with a plough coulter, but of that there was no direct evidence. There was no external wound, and the closest examination of the shaven head failed to disclose depression. All the symptoms, however, pointed to compression and laceration of the brain, and the diagnosis of fracture was therefore made. The *post-mortem* revealed a starred fracture extending through the frontal, parietal, occipital, and nasal bones in several directions without displacement, large clots in the hemispheres and effusion at the base, &c., &c. The skull was remarkably thin.

**GOUT.**

**JAUNDICE.**

**MEASLES.**

**MOVABLE KIDNEY.**

**NECROSIS.**

**OBSTRUCTION OF THE BOWELS.**—The case recovered under large doses of opium combined with manipulation, the bowels being distended with water through the long tube. Patient, merchant, fifty.

**PERIOSTITIS.**

**PROGRESSIVE LOCOMOTOR ATAXY.**

**QUININE RASH.**

## RICKETS.

## SUPPRESSION OF URINE.

## DYSPEPSIA.

CASE I.—Dec. 29.—Bessie F., servant girl, aged twenty-two; appearance healthy; complains that she throws up her breakfast and dinner some time after she eats them. The vomited matters are sometimes sour (milk is always curdled). Sometimes they are dark. Expectorates largely every morning without cough, and feels her throat dry. Has lost her appetite. She is obliged to work very hard. Pulse 80; tongue clean. Bowels and catamenia regular.

Directed to eat slowly, and not altogether satisfy her appetite; to rest awhile after meals, and to take a grain and a-half of quinine, and one-thirtieth of a grain of strychnine twice daily before food.

Jan. 9.—For the first five days she was taking the pills she retained her food, but since that she has vomited half her dinner. She cannot obey the direction to rest awhile after eating, as she is frequently disturbed, even when at a meal. Her stomach feels sour, and she still hawks up a good deal of expectoration in the morning.

To take ten grains of bismuth, two grains of sulphate of quinine, five grains of bicarbonate of soda, and five grains of compound kino powder in a little water an hour before breakfast and dinner.

Jan. 15.—Did not vomit a meal since.

Jan. 23.—Quite well.

CASE II.—Dec. 29.—Mary F., small farmer's daughter, aged twenty-seven; appearance healthy; complains that she gets sick every morning an hour after breakfast, and throws it up, sometimes unaltered, sometimes acid, and sometimes with a good deal of yellow stuff. She works hard. Pulse regular; tongue clean. Ordered quinine and strychnine pills like the last case, with similar directions as to her eating.

Jan. 9.—Has been sick several times since. Thinks the pills sickened her, they were so bitter. Gets into cold perspiration and weakness. From this date until the next she was treated by various remedies, none of which did her any good, with the exception of small doses of Battley's sedative liquor in combination with infusion of gentian. This kept her food on her stomach until evening, but she averred that she was very sick, and breaking out

into cold perspirations all the time. In the evening she usually vomited sour water.

March 30 —The menses are scanty and pale, and it is noted that she answers questions monosyllabically. Directed to take two grains of valerianate of quinine and valerianate of iron in pill twice daily.

April 13.—Not sick since, but some cold perspiration. To go on with the medicine.

May 15.—Much better and stronger. No sickness. She has since continued well.

The foregoing cases were very similar at first sight, yet the last one, which might be called hysterical dyspepsia, was treated carefully for more than two months with remedies directed to the stomach without improvement, and got well at once on being treated for the general state. I was not at that time aware of M. Chairon's discovery of the insensibility of the epiglottis in hysteria, or the diagnosis would have probably been corrected sooner. I have verified the observation almost invariably, and in one man, who presented many symptoms which in a woman would be called hysterical, this insensibility existed in a very marked degree. The epiglottis could be scratched with the finger without producing the slightest sign of spasm or uneasiness.

CASE III.—Oct. 12.—J. R., farmer, aged sixty, complains of pain, pretty constant in the epigastric region, but worse after eating salt food or green vegetable. He has occasional pyrosis. Sober man. Marked tenderness on pressure over the epigastrium, which is tympanitic. Heart sounds heard by placing stethoscope upon it. Bowels regular. Chest sounds natural.

Directed to eat slowly, rest after meals, and take one tablespoonful thrice daily of a mixture containing two drachms each of bicarbonate of potash and Battley's sedative liquor, and twelve ounces of the compound infusion of gentian. To apply a blister to the epigastrium.

Oct. 26.—Better. All his complaints have vanished, with the exception of a little soreness still over epigastrium, for which he was directed to repeat mixture and blister, substituting cinchona for gentian in the former. He has since remained well.

CASE IV.—July 3.—J. C., labourer, aged thirty-five, complains of a great pain in the left side, which he attributes to having over-worked himself from six in the morning until nine at night. Has

a large family of young children. Appetite bad. Bowels confined. Had mustard on, with partial relief. Directed to take a tonic potash mixture and an aperient.

July 17.—The mixture relieved him for a time, but he relapsed, and he now complains of getting a fit of weakness in the morning, and suffering from great dryness of his mouth and throat. The epigastrium is tympanitic. A small blister was applied, which gave temporary relief, but he again and again relapsed, until, at length, he was ordered, on Jan. 2, to take repeated small doses of castor oil.

Jan. 9.—Passed a round worm a foot long, and lost all his complaints.

He has since remained well.

The last case is an example of the obscurity that sometimes surrounds the diagnosis of what might be called vermicular dyspepsia. I have another case recorded at length, in which the symptoms were—pain after eating, nervousness, and loss of appetite, but principally a great disinclination to move. The patient was a herd, about fifty-five, and, as he expressed himself, if he slipped into a ditch accidentally, he would like to lie there all day. Various treatment, carefully pursued for over two months, having proved futile, he was at once and permanently cured by a dose of santaline and castor oil.

CASE V.—March 17.—M. T., aged forty, married, no family, appearance healthy, complains of pain in her back and occasional profuse perspirations and weakness. She has occasionally great flows of saliva. She is very heavy and nervous before they occur, and they relieve her very much. She feels numbness in her limbs, which, however, disappears after exercise. Yesterday, when the saliva was flowing, a good deal of blood came along with it, but she had no vomiting. Appetite fair. Bowels confined, but when they do act the evacuations are dark and tarry. The catamenia are regular, but latterly they are lighter in colour and smaller in quantity than they used to be. There is also, I should observe, a *watery eye* and large pupil.

She was directed to take ten grains of calomel, following it up by a mixture containing sulphate of magnesia.

Mar. 24.—Better in every way. The alvine evacuations after the medicine were first tarry, then frothy, and latterly quite natural. An acid tonic completed the cure.



CASE VI.—May 12.—Mary C., aged twenty-eight, unmarried, appearance healthy, has been subject to dry retching for a number of years, complains now of perspiration and nervousness, frequent attacks of gastric pain, followed by vomiting of matter which solidifies on standing. Sometimes it is mixed with blood, or matter resembling coffee-grounds. Alvine evacuations often black and tarry. Appetite good. Papillæ on tongue, along the side of upper surface and towards the lip, enlarged and separate, appearing like congeries of small shining beads on the surface of the organ when protruded. *Eyes watery-looking*; a large pupil. Sleepiness, heaviness, and yawning precede the attack. Was irregular in her changes for some time some years ago. They are now all right. Case treated like the preceding one.

May 19.—Better. To go on.

June 6.—Well. Beady appearance on tongue disappearing. Motions natural.

I have frequently observed a watery appearance of the eye in cases similar to the foregoing. The appearance of the eye is not that of suffusion, nor is it that which is seen in some chronic affections of the kidney. The poetical term of "liquid azure," should that happen to be the colour, would probably be nearest to correctness.

I may mention in this place the case of a child, nine months' old, looking well-nourished, who was brought to me for frequent vomiting of food. His mother stated that dry vomiting was a frequent result of his attempting to swallow. Face flushed; bowels regular; tongue rather foul. Pharynx and fauces red and injected, and a small cavity, like an ulcer, on one tonsil. I first tried the plan of having some powdered alum applied to the fauces with the finger, while I ordered a sedative mixture, containing chlorate of potash. This having failed to relieve, I painted the throat with solution of nitrate of silver, which at once stopped the vomiting. He was well a day or two after.

#### EXCORIATIONS OF THE OS UTERI.\*

CASE I.—Aug. 7.—Catherine C., delivered of her tenth child in

\* In a case of chronic inflammation of the cervix, accompanied by profuse yellow discharge and a patulous os, after milder means failed, I carried a pledget soaked in nitric acid to the fundus (see Dr. Atthill's work on Diseases of Women, 2nd edition). The effect was most satisfactory. There was neither pain nor inconvenience complained

† at my next inspection I found the disease almost cured.

May last, complains of great weakness when she attempts to stand or change her position. Very low spirits and loss of appetite in the morning, while in the evening she finds it difficult to believe there is anything the matter with her. Tongue whitish and curdy. Well-marked purple line on gum border. The speculum showed a large raspberry excoriation on both lips of the uterus. There was no irritability of the bladder and no pain. The treatment consisted of astringent injections night and morning, and the excoriations were touched weekly with the nitrate of silver. She was directed to take two-grain doses of quinine thrice daily.

Sept. 20.—Excoriations healed. There was no notable improvement in the spirits until the excoriations were almost healed, and then suddenly she got rid of all inconvenience.

CASE II.—Oct., 1870.—Mrs. P., aged thirty. Last child four weeks old. Felt some difficulty in walking when she got up first after her confinement. Complains now of a burning pain internally and great irritability of the bladder. She is rather nervous, and fears she may be labouring under some fatal disease. Appearance healthy; pulse quiet; tongue clean, and appetite good; uterus somewhat lower than usual. The speculum shows a raw-looking papilla, or granulation, just inside the posterior lip of os, and some smaller ones on the anterior lip. The excoriation was touched with strong tincture of iodine, then with nitrate of silver, but finally with carbolic acid. She took internally sulphate of quinine, and occasionally a potash tonic mixture, and used astringent injections night and morning. Her improvement was very gradual, and she was not perfectly cured until July.

I have had occasion to notice, that when the excoriation is small and of the same character as that occurring in the last case, there is often great distress occasioned by burning pains, and even, as in the last case, troublesome bladder irritability; while, when it is as large even as a florin, there is frequently, indeed usually, no pain or irritability complained of. In these latter cases, however, the low spirits are often very marked.

#### MIDWIFERY OPERATIONS.

In every case where delay occurred in the second stage of labour, the forceps has been used early, and with the best results—all the mothers and all the children having recovered well. It has not

been found necessary to perform craniotomy for the past three years. Turning was twice performed, and there was one case of partial placenta prævia. All the mothers and children did well. One case may be here mentioned where a child was born with two superfluous thumbs. They were at once removed, and the bleeding being remarkably free, I touched the stumps with a hot knitting needle, which prevented the necessity of keeping dressings on, always a difficult matter on the constantly moving hands of an infant, and procured an excellent result to these little operations.

#### PHTHISIS.

CASE I.—July 15, 1867.—J. G., gentleman, aged thirty-five, appearance thin and worn, complains he has been getting weak for the past few months, and losing his appetite, strength, and flesh. He feels scarcely able to walk any distance from the weakness of his legs, and any slight exertion puts him out of breath. He has a troublesome cough. Some fifteen years since he got a very severe wetting, after which his voice always remained husky. He has been troubled with sour stomach occasionally for past few years. Two uncles died of phthisis, and he lost a sister from some chest disease. He has for the past ten or twelve years passed almost every night in a close breath-laden atmosphere. Never spit blood. Weight not recorded. Percussion slightly dull under right clavicle, and vocal fremitus greatly increased on that side. Respiratory murmur feeble on both sides; pulse 90. Directed to avoid strong tea or coffee; salt meat; vegetables, except potatoes mashed in gravy; to sleep in pure air; to keep out in the air from morning until night,<sup>a</sup> using all proper precautions against chills and wet; to take horse exercise;<sup>b</sup> to wear flannel next the skin in the day-time and cotton at night; to sponge the chest freely with cold water every morning,<sup>c</sup> and afterwards rub vigorously with a coarse towel; to take at lunch daily an egg beaten up with a glass of whiskey, and twenty grains of saccharated carbonate of iron;<sup>d</sup> to paint iodine tincture over the chest, and to take cod-liver oil<sup>e</sup> after meals, in teaspoonful doses at first, to be gradually increased if it agrees. He had, besides, a sedative mixture for the cough.

<sup>a</sup> M'Cormick "On Consumption."

<sup>b</sup> Sydenham.

<sup>c</sup> Graves' "Clinical Lectures."

<sup>d</sup> Tanner, "Practice of Medicine."

<sup>e</sup> Hughes Bennett, "Principles and Practice of Medicine."

Sept. 15.—He was seen by a medical friend after his last visit, who assured him that his lungs were sound, and that he had merely slight bronchitis. He, therefore, omitted treatment, with the exception of cough mixtures and lozenge, and about a week since he got rather a sharp attack of blood-spitting. I now recommended him to have further advice, and he was accordingly seen by two of the most eminent physicians in Dublin, who confirmed the former diagnosis, and ordered him to spend the winter on the Continent. The treatment as above was then resumed, and as he happened to be a man of distinguished ability and of a wide range of reading, which included a good deal of medical literature, it was considered proper to explain to him minutely his state and reasons on which the treatment was based, trusting to his own good sense and observation to carry out the treatment, and to modify or leave off any part that seemed to disagree, and I have no doubt that to himself is due in a great degree the ultimately successful result. He was directed, in addition, to take two ounces of rum in warm milk before rising every morning.

June 10; 1868.—Better in every way, but he has not as yet pulled up as much flesh as he had before his illness; cough nearly gone; appetite good; strength greatly improved.

Nov. 15.—Not so well; has had some renewal of blood-spitting and cough, and is losing flesh. He has not carried out the treatment since he returned home. Directed to resume it, and as the glottis looked congested it was touched with solution of nitrate of silver. He was ordered to spend this winter again on the Continent.

May, 1869.—Greatly improved; cough gone; appetite good; can walk seven miles briskly without any inconvenience. From this date he continued to enjoy good health until 1871, when he suffered from a sharp attack of neuralgia, the pain darting through the right eye and right side of head. This subsided under appropriate treatment, and he has since remained perfectly well.

It should have been said, that throughout the case some preparation of bark, mostly quinine, was given before meals.

CASE II.—April 26, 1870.—P. S., gardener, aged thirty six, unmarried. Has been ailing for the past three months. His illness commenced with a stitch in the side, which confined him to bed for three weeks. When he got up he had a cough which has since been getting gradually worse. The sputa were at first tinged with blood. The cough is very severe at night and in the morning, and

the expectoration is profuse. He sweats about the head and neck when he sleeps. He thinks he is better every day from about twelve till two o'clock. His appetite was very bad, but he thinks it has slightly improved lately. He gets short breathing on slight exertion, and feels his back and legs very weak. Sleeps in a room without a fire-place, and rather damp too. Chest is flattened under right clavicle, and respiratory murmur absent on that side. Some pectoriloquy. On the other side the breathing is coarse, and at base of lungs some bronchial râles are audible. Pulse not noted. The rima glottidis, seen through the laryngoscope, is congested.

Weight 9 st. 9 lbs. Similar directions were given to him as to the last case, with this exception that the quinine was given in pill, in combination with conium. Fauces touched with solution of nitrate of silver, applied with a loose whisking pad, so that the glottis might be reached.

May 7.—Weight 9 st. 11½ lbs. Appetite better; sleep better; perspiration and cough lessening; pulse 100.

May 21st.—Weight 10 st. 3 lbs; cough much better, but still sweats at night. To omit pills and take the quinine in combination with sulphuric acid instead.

June 10.—Weight 10 st. 8 lbs. Appetite and strength greatly improved.

He has since remained well.

CASE III.—Feb. 23, 1869.—Matthew C., aged nineteen, complains of severe cough, which is worse at night on lying down. He has been getting thin lately. A month ago he spat some blood, bright scarlet. The bowels are regular, but the alvine evacuations are occasionally blackish. Some years ago he was hoarse and had no voice, but his throat was never sore. Pulse 80, vocal fremitus increased on right side under clavicle. Respiration on that side rough. Directions as above, substituting bark and chlorate of potash for quinine. Weight not noted; looks thin.

June 11.—Vocal resonance and cough disappeared. Weight 11 st. 4 lb.

August 25.—Was again attacked by the blood-spitting. Pulse 105; chest sounds normal; gallic acid and a sedative cough mixture.

Sept. 1st.—Pulse 78. Sulphate of quinine was ordered, and a small blister under the clavicle. He rapidly improved, and he has since remained well.

**CASE IV.**—June 28, 1870.—Mrs. F., aged thirty-three; married. Complains of difficulty of breathing on ascending a height. She has constant stuffing of the nose with occasional soreness of the throat. Has a good appetite, except in the morning. Cough not very troublesome. She is suckling a child about nine months old. She spat blood several times lately. Her mother died of consumption at forty-two years of age. Percussion gives a clear sound on the left side, but a dull one on the right side, under the clavicle, and at the same spot slight crepitation can be detected. Respiratory murmur rough, and vocal resonance increased on that side. The usual treatment ordered. To stop nursing, and put a blister under the right clavicle.

July 7th.—No better. Did not use the medicine or put on the blister. Complains greatly of head-ache attacking the right brow, the pain shooting through the eye, which is often attacked by what she calls inflammation, but which leeching relieves. Objects appear to that eye hazy and indistinct. Her feet are very cold, so much so that they waken her at night, and she has a darting pain under her right shoulder-blade. There is slight soreness on pressure on one side of larynx, and the glottis, as seen by the laryngoscope, is congested.

The former treatment was again directed, and adopted with more or less care, and up to the present she continues in fair health.

**CASE V.**—July 4th, 1870.—Mr. T., student, aged twenty. Enjoyed good health until last October, when, in journeying to the south of France, where his college is situated, he caught cold. He got a bad cough, which, however, got nearly well from time to time, but as often got worse again until now. A physician, who examined him in Autun, assured him that his chest was at that time sound. He feels very weak; pulse 120; respiratory murmur rather harsh in both lungs, but at the apex of the right lung there is a great increase of vocal resonance with harsh breathing sounds, and the right clavicle is duller than the left. Never spat blood. Slept in a room without a fire-place when a boy, and in his dormitory in college there were thirty-six sleepers and no fire-place. There are windows all along one side, and at both ends, but they are all shut in winter. He says, however, it did not feel close. Weight 12 st. Directed to be cautious in taking any but horse exercise, and prescribed the usual treatment. He had left my house about two hours and had dined with a friend, talked a great deal, and taken

one glass of punch, when he suddenly coughed up a considerable quantity of blood. He was greatly frightened and came back to me at once. Ordered gallic acid and perfect quiet until all traces of blood vanish, then to commence treatment.

July 18th.—Feels very nervous and shaky. The iron disagrees and makes him feel heavy and sick. Everything else agrees well, and the cough is softer and less troublesome. Weight 12 st. 2 lbs.

August.—Better; weight 12 st. 7 lbs.

He continued well up to the end of last year, when I lost sight of him.

CASE VI.—October, 1868.—R. T., aged thirty-five, merchant, has been getting gradually weak and losing his appetite. Has had very harassing and anxious transactions, involving large sums of money; and he has often fasted for ten or twelve hours almost unconsciously. His hair is grey, and his appearance worn and anxious. He has suffered latterly from cough; he has dulness, slight, but appreciable, under right clavicle; rough respiratory murmur, and great increase in vocal fremitus; he had had sore throat occasionally; he feels pain in his back and general weakness; bowels confined; pulse 90; tongue clean; takes no stimulants, with the exception of a very occasional glass of grog after dinner. Directed to be regular in his meals, and to commence the treatment as above. Weight 11 st. 5 lbs. Several of his brothers died of consumption about his present age. He was seen a few days after by an eminent Dublin physician, who confirmed the previous diagnosis, and strongly urged him, in conjunction with myself, to spend the winter on the Continent. However, his trusts were so numerous and complicated, and the money loss would be so large, that he determined to put it off to the last moment. The treatment was, therefore, proceeded with, and as the glottis was congested it was swabbed with nitrate of silver solution.

Nov. 19.—Better. Appetite improving, and cough less but still somewhat troublesome. Weight 11 st. 13 lbs.; pulse 72. Ordered two ounces of rum in milk before rising every morning, in addition to the mid-day and after-dinner dose.

Dec. 20.—Still improving, though cough is still troublesome. Weight 12 st. 9 lbs.; pulse 60. The dulness and increase of vocal fremitus is still marked. He says the rum and milk make the sputa come up much more easily.

Jan. 22, 1869.—He has had two or three attacks of blood-

spitting since of trifling amount, and a slight febrile attack. It speedily subsided under salines, and the treatment was resumed.

Feb. 7.—Steadily improving; weight 13 st.

June 28.—Weight 15 stone. He has since continued to enjoy excellent health, but the dulness and increase of vocal fremitus continue to exist for about a space of three inches in diameter, just below the right clavicle.\*

The foregoing cases were selected from others as they happened to come under observation at an early period of the disease, which is seldom the case in country practice. The amount of lung tissue involved was small, and thus rendered it possible to treat them with some hope of success. They all continue under occasional observation, with the exception of Case V.

In all of them particular attention was directed to any laryngeal irritation; and the application of nitrate of silver solution, half a drachm to the ounce, seemed to exercise a marked effect for good on the cough.

It is interesting to note the effect of alcohol, when it agrees in lowering the pulse.<sup>b</sup> In the last case the pulse steadily lowered in number of beats and gained in volume, while the patient, previously almost a teetotaler, was taking nearly half a pint of whiskey and rum together per diem.

#### FORCIBLE DIURESIS.

Mr. J., aged fifty-nine; teacher; unmarried. Has had occasional kidney attacks, characterized by scanty quantities of urine, and slight swelling of the hands and feet. He has been ill with one of them for the past three days, and the urine is gradually getting less. He has slight stupor. The usual means were taken to make the skin act, and to restore, if possible, the secretion, but he became steadily worse, and the following day total suppression occurred. Towards evening he got gradually insensible, and, finally, he could not be roused. His skin became covered with a foul-smelling perspiration, and the urinary fragrance of his breath was very perceptible. About 7 o'clock he got a slight convulsion, which was followed in ten minutes by one much more severe and prolonged. I was sent for in haste, and when I saw his apparently hopeless condition,

\* See Case XX., Lænnec, "Phthisis Pulmonalis."

<sup>b</sup> My attention was first directed to this effect of alcohol by Dr. Hudson, when I was a student of the Meath Hospital.



I determined to attempt to produce forcible diuresis, a successful case of which I had seen recorded a short time previously in the *Medical Press*, by Dr. Waring Curran. I gave him at once about an ounce of acetate of potash dissolved in half a pint of water. He had shortly after another fit, but this time very slight, and in about two hours he was plainly more conscious than before. He gradually improved during the night, and at my morning visit I found him quite sensible. He had passed considerably more than a pint of water, dark, and loaded with blood. He completely recovered from his attack.

#### QUININE RASH.

A lady patient, married, aged thirty-five, was suffering from hemicrania, which attacked her every day at the same hour. I gave her valerianate of quinine, and on the second day of its administration, a close red rash appeared all over one side of the chest, arm, and hand, and a little on the opposite wrist. It smarted a good deal. The following day it spread to the other side, but was less smarting than before, and looked inclined to be chappy. The next day but one the rash began to desquamate all over the body as bad almost as scarlatina. On the chest there were three or four spots of dark red. The tops of the ears were burning during the attack, and also threw off the white scarf. She was treated by stopping the quinine and giving saline aperients.

#### NEURALGIA.

Neuralgia has been treated by first giving a gentle aperient, and then giving two grains of sulphate of quinine\* simply suspended in cold water every hour until the pain ceases. It has been found perfectly effectual, and productive of neither head-ache or sickness. The initial stage of hay fever, "the sneezing and coryza," was stopped by giving it in the same manner. The lady, for two days, imagined herself cured, but the cough and tightness of chest then recurred.

#### HYPODERMIC MEDICATION.

Sub-cutaneous injection of morphia was frequently used. It appeared most serviceable in allaying the pain of the dry stage of

\* I first saw this treatment adopted by Dr. Robert M'Donnell.

pleuritis, in which its action was magical. It proved very useful in rheumatism, colic, cancer, and mania. It was found least successful in a fatal case of acute gastritis from whiskey drinking, with uncontrollable vomiting and restlessness. The largest dose given by its means seemed to have no effect whatever.

#### HYGIENE.

By referring to the return for June, 1872, it will be seen that a regular little epidemic of fever broke out in that month in the district. The seat of the outbreak was a village about a mile from Kells, and the mode of invasion is not without interest. A strolling beggar boy, just dismissed from a fever hospital about eight miles distant, came into a house in the village and sat down at the fire to warm himself. The mistress of the house was cooking, and as she stooped over where he sat she felt she got a head-ache. She immediately got a shivering fit, went to bed, and the next day she had bad typhus. She died on the sixth day of her fever. Two other inmates of the house took it from her, and then it spread to some ten houses about, which, though separated from each other, in some cases by a field's breadth, had no doubt frequent intercommunication. As there is constant intercourse between this village and Kells, it became a matter of great anxiety to me, as medical officer of health to the township, to keep the town free, for fever has been hitherto very fatal in Kells.\* I, therefore, had all the poorer houses whitewashed inside and out; the ground saturated over the whole town every third or fourth day with a weak solution of carbolic acid, and I kept a close watch for any suspicious case of illness. The first case occurred in one of the lowest and dirtiest dens in the town, in the person of a boy of fifteen, who was at once removed to hospital, his bed burnt, and the whole house and premises thoroughly disinfected. No other case occurred in that house or neighbourhood. The second case was in a similar house or hovel at the other end of the town; the same precautions were adopted with like results. The third case was that of an old woman in a similarly unsanitary locality, distant from the other two. She died, and was the *only* person who died from fever in Kells.

\* "Fever is very prevalent, and is nearly three times as frequent in the Kells Dispensary district as in the whole union, the other districts being more rural. In 1818 one-third of the people were seized with fever."—Mapother on Public Health, 2nd edition.

The usual precautions were again put in force, and no second case occurred. We had six or seven other cases arising at intervals, always in badly sewered or dirty localities; but of these the last three or four were simple fever, and they occurred when the epidemic had subsided. In two cases the patients, mothers of families, went through the whole fever in their own houses, and in neither house was there a second case. This I attribute to the continual sprinkling of Condy's fluid in the sick room, while all the discharges, soiled clothes, sheets, &c., were at once placed in tubs containing a dilute solution of it, and all the yards and passages were every morning and evening disinfected with carbolic acid. In the country, on the other hand, we had two or three cases out of each house, and the mortality was very high.

Thus suitable sanitary measures, strenuously applied, created an effectual barrier to the progress of the disease in an overcrowded town, while in the country, where immense natural advantages were rendered useless by human ignorance or carelessness, the disease proved immeasurably more fatal.

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ART. XIII.—*Case of Athetosis.* By H. S. PURDON, M.D.,  
Physician to the Belfast General Hospital, and to the Hospital  
for Diseases of the Skin.

WE are indebted to Dr. William A. Hammond, of New York, for an accurate account of the disease known and designated by him—Athetosis. The chief phenomena of the disease consists in an inability to keep the fingers and toes from continued motion. "The movements," he says, "are not disorderly like those of hysteria, and chorea, nor so tremulous as those of paralysis agitans, and the various forms of sclerosis, hitherto described. They are regular, and are to some extent under the control of the will—that is, by a strong effort of volition, the patient can, for a short time, prevent them, but they soon re-assert themselves, notwithstanding his most strenuous endeavours to keep the muscles quiet. Even during sleep the movements continue more or less." <sup>a</sup> The following case, I believe, was an example of this disease, for the notes of which I am indebted to my resident clinical clerk, Mr. Henry McClure:—

<sup>a</sup> New York Medical Record, July 1st, 1873.

R. F., aged fifty-four, by occupation a tailor, was admitted into the Belfast General Hospital, under the care of Dr. H. S. Purdon, suffering from debility and tremors. He complained of weakness and trembling of both upper and lower extremities; his head is very seldom implicated; the tremors occasionally cease; the agitation of the extremities is similar to that observed in paralysis agitans, but slower, the thumb and little finger being chiefly involved. There is no loss of power in arms, and the muscles of forearm are well nourished and developed. He feels no pain in affected part; has no difficulty in swallowing, and appetite good. During the paroxysms of the trembling there is well marked fibrillary tremor in the muscles of both arms. The hands and feet are abnormally cold. His previous history is as follows:—Is married; has had four children, two of whom died of scarlatina; has never been intemperate, and always, till present attack, two years ago, enjoyed good health. One day, whilst at his employment, he felt a violent pain in the right shoulder which extended by degrees to the tips of his fingers. He continued at his work for eighteen months. During this time he occasionally suffered pain, and felt day by day becoming more awkward in his movements. He then noticed, for the first time, the tremor in his limbs, and was obliged to discontinue his employment. After a rest of several weeks, again resumed work, but found himself unable to execute the necessary movements of both hands that were required, from which time, till his admission into hospital, a period of three months, he has been in the same state as regards the disease. Within the last week, urticaria has troubled him, although he has eaten nothing to derange the stomach. He was ordered valerianate of zinc, good diet, and, subsequently, the bromide of iron and potassium.

Such are the brief notes of the case, which resembles paralysis agitans, but differs in several important particulars. We know that paralysis agitans and chorea are often symptoms of brain disease, and that the main character of chorea, paralysis agitans, and mercurial tremor, is a shaking or jerking movement of the muscles due to imperfect innervation; but there are remarkable differences among them, both with reference to the manner in which the movement takes place, and the causes which excite it.\* There are two kinds of paralysis agitans, so to speak.—1. Those with discoverable organic lesions; and, 2nd, those where no lesion can be found. It is

\* See Barclay's Medical Diagnosis, p. 237.

accompanied by wasting and weakness of muscles, and is generally confined to the aged, although Dr. Beard states he saw a typical case in the Clinic of Duchenne (Paris), occurring in a child two years old.<sup>a</sup> Dr. Hundspred Jones<sup>b</sup> believes that there is a form of shaking palsy met with in younger persons than those generally seen, and is more curable, and, therefore, presumably not dependent on organic change. Dr. Hammond states that the cause of athetosis is not clearly made out. In two of his cases the patients were intemperate, whilst in a case under the care of Dr. Allbutt<sup>c</sup> the patient was a temperate woman. The prognosis is unfavourable, and Dr. Hammond has not seen any case "materially benefited by treatment. In each case there has been a steady advance in the severity of the peculiar symptoms, but the general strength of the patient has not been much impaired."

In regard to diagnosis, the following are the most important diseases to distinguish from. I omit such affections as multiple cerebral sclerosis, secondary degeneration from cerebral hæmorrhage and chorea. To quote Dr. Hammond again: "In paralysis agitans there is tremor and not entire muscular contraction. There is no pain, no anæsthesia. The tremor usually ceases during sleep, and there are often intermissions during which the patient is comparatively quiet. There is no tendency to the tonic contractions which seem to ensue late in the course of athetosis." Epilepsy Dr. Hammond would never have thought of mentioning in contradistinction to athetosis, were it not that M. Garnier<sup>d</sup> imagines epileptiform convulsions, which almost every one has seen, and which are well described by Dr. Hughlings Jackson. Our author thinks that if M. Garnier had ever seen a case of athetosis, or had even carefully read his description of it, he could not possibly have made the mistake of confounding it with any form of epilepsy. To be sure, he says, athetosis often begins with epileptiform convulsions, but so do many other cerebral diseases. The spasms to which Garnier refers are paroxysmal and temporary, while the movements of athetosis are continuous. I cannot resist mentioning in this place the rare and peculiar form of epilepsy<sup>e</sup> observed in infants, viz.,

<sup>a</sup> Treatises on Medical uses of Electricity, pp. 464.

<sup>b</sup> Functional Nervous Disorders, p. 242.

<sup>c</sup> Medical Times and Gazette, Jan. 27th, 1872.

<sup>d</sup> Dictionnaire Annuel des Progrès des Sciences Médicales: Paris, 1873. P. 43. Art. Athetosis.

<sup>e</sup> See Tanner's Index of Diseases.

salaam convulsions or eclampsia nutans, attended with frequent bowing of the head, and occasionally of the body, that come on in paroxysms, and in which disease, after a time, cerebral symptoms of paralysis ensue, together with general wasting of the body. To conclude this paper, Dr. Hammond states that "relative to the morbid anatomy nothing is known, as no *post-mortem* examination has as yet been made in any case of athetosis. Physiology would, however, indicate the *corpus striatum*, and perhaps also the *optic thalamus*, as the seats of the morbid process of the diseased condition is most probably sclerosis, which in its turn is the result of slow inflammation. As regards the treatment nothing has yet been efficacious in arresting the onward march of the disease, though galvanism has apparently exercised a slight controlling power."

In my case there was no anæsthesia, as has been observed in athetosis, but the opposite condition, viz., hyperæsthesia, as shown by the urticaria, which was a reflex neurosis—as I have shown in my book on "Neurotic Skin Diseases." According to Dr. Althaus<sup>a</sup> these two conditions, viz., anæsthesia and hyperæsthesia have been too much separated, seeing that they are often allied.

<sup>a</sup> British Medical Journal, December 19th, 1868.

the expectoration is profuse. He sweats about the head and neck when he sleeps. He thinks he is better every day from about twelve till two o'clock. His appetite was very bad, but he thinks it has slightly improved lately. He gets short breathing on slight exertion, and feels his back and legs very weak. Sleeps in a room without a fire-place, and rather damp too. Chest is flattened under right clavicle, and respiratory murmur absent on that side. Some pectoriloquy. On the other side the breathing is coarse, and at base of lungs some bronchial râles are audible. Pulse not noted. The rima glottidis, seen through the laryngoscope, is congested.

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same treatment—bleeding as long as blood would flow, purgation till blood passed from the irritated bowels, and wine only when subsultus tendinum announced the near approach of death.”

The editor is in favour of the use of the tincture of sesquichloride of iron, recommended in the treatment of erysipelas by Dr. Ranking, and he gives an instance in which he considered it of eminent service. The case was one of puerperal fever apparently, complicated with diphtheritis, in which one or two tea-spoonfuls of the tincture was given every two hours.

We have tried this drug in a large number of cases, and believe it to be one of the most valuable remedies we possess for the treatment of erysipelas.

The mercurial ointment local treatment of erysipelas was largely tried by Velpeau. In 200 cases it was used by him, and sometimes it “seemed to diminish the duration of the disease by a day or two; but it is very dirty and mischievous if it salivate.” We were never very fond of this application in erysipelas, and relinquished its use some years ago, having seen it rapidly salivate some old people to whose erysipelatous skin it was applied, and whose death was thereby apparently hastened.

We are not quite satisfied that the editor inculcates the best practice to follow in extravasation of urine.

“If,” he writes, “in a case of extravasation, free incisions have been made, and the urine flows off freely by them, which will be the case if they have been properly made, there is no occasion to pay much attention to the stricture at first; on the contrary, it is better to wait for a few days before applying any systematic treatment to it. The stricture will be more amenable to dilatation after rest, and the removal of the urine through the artificial openings which have been made.” We object to this teaching, because in some of these cases, notwithstanding the existence of the openings, urine may be found in the bladder, and as both this viscus, as well as the urine, may be more or less diseased, the retained urine should be withdrawn. These are points upon which Sir Benjamin Brodie dwelt, and his teaching regarding them seems more consonant with sound practice than that of the editor.

The editor has overlooked the fact, that the extravasated urine has been observed, rarely, no doubt, to pass down the front of the thigh. He writes that:—“If it become very widely extravasated, it does not pass downwards, or backwards, but forwards, into the scrotum and penis, and then into the groins and cellular tissue of

the parietes of the abdomen, and this (?) nearly up to the ribs." This, certainly, is the usual course in these extensive urinary extravasations; but, as we have hinted, the urine may also make its way down the thigh. The late Mr. Morton, of University College Hospital, London, has recorded such a case. The urine, having reached the groin, eventually led to the destruction of Scarpa's fascia, which barrier having been removed, it rapidly passed down the thigh.

In the article on "Fractures" will be found the following observations on partial fractures of the bones in children:—"In 1821, Dr. J. R. Barton, of Philadelphia, published a valuable paper on the subject, including also remarks on another injury to the bones of children, which he calls a *partial, or incomplete, fracture* of a single bone, or both bones. These cases had been previously noticed by Underwood and Boyer, and perhaps by them alone." Again—"Mr. Hart, of Dublin, met with five cases of partial fracture of long bones." This is a very imperfect history, indeed, of partial fractures in children; in truth, neither Barton, Underwood, nor even Boyer was the first to describe them. They were known in England long previous to the time of Underwood. An English surgical dictionary should contain the information that partial fracture was well-known to Wiseman, who, in the year 1696, wrote thus:—"There is also a Curvedness, which may be reduced to a Fracture. I have seen it in Children often, as in D. C.'s little Daughter in the *Old Baily*, and Mr. N.'s son in *Black friers*, and others. It is, as it were, when you break a green Stick; it breaks, but separates not; So is cured by a due Extension, with little trouble to the Chirurgeon, or Pain to the Patient, after the Extension is made." We apprehend that this description of the sally-switch fracture has not been improved upon by writers subsequent to Wiseman.

From our observation of fracture of the neck of the thigh-bone within the capsule, we are inclined to the opinion that we do not get in this injury so much assistance from crepitus as is stated in this work. It is laid down by the editor, that "it must be borne in mind, however, that in cases where the ends of the fracture have been separated from each other by the action of muscles, or any other cause, it will be impossible to feel a crepitus unless the surgeon so manages the limb as to bring them in contact. This is especially true of fractures of the cervix femoris within the capsular ligament, where the two pieces may be separated from each other to the extent of an inch or more."

We are aware that Sir Astley Cooper has given directions, in his treatise on fractures and dislocations, by following which, he states, crepitus may be elicited. The leg, he says, is to be drawn down, so as to bring the limbs to the same length, then rotation is to be performed, when crepitus will be developed, in consequence of the broken ends of the bone being thus brought in contact. This manœuvre of Sir Astley Cooper is based on the assumption that the inner or short fragment remains in the position it occupied immediately previous to the completion of the solution of continuity. This, however, is so exceedingly doubtful, that we believe it to be most difficult to develop crepitus in intra-capsular fracture of the cervix femoris. Some surgeons go so far as to say that it never occurs; others, that it is most frequently absent.

Notwithstanding the high authority of Velpeau, in favour of the immediate application to fractured limbs of starched bandages, or other *immovable apparatus*, we think the practice followed by the majority of good English surgeons, as mentioned by the editor, to be preferable, or sounder surgery. This is, "not to lose sight of the limb until the inflammatory swelling has subsided, and the parts about the fracture are in a quiescent state." . . . "Used in this manner, the starched bandage is a very valuable aid in the treatment of fractures."

The majority of English surgeons probably agree with Samuel Cooper in his condemnation of trepanning, or of cutting out portions of a fractured vertebra, when the compression of the spinal marrow, or its injury, by a splinter is suspected. According to his "judgment, the indication can never be sufficiently clear to authorize the operation, which, on account of the great depth of the intervening soft parts, must be tedious, and even difficult to effect, without risk of increasing the injury which the spinal marrow may already have received." We might add that the bodies of the vertebræ may be so injured as to render the operation beyond the reach of successful surgery. If we reflect that the spinous processes, the transverse processes, and bodies of the vertebræ may be broken, and that these fractures of the vertebræ are usually complete, and that even a piece of a broken body may project into the spinal canal, it is more than probable that this recently revived operation will not be often repeated; at least, by the judicious surgeon.

It has been remarked, that the paralysis seen in these cases is more frequently the result of a lesion of the spinal marrow, independent of the fracture, than of compression or of laceration

of the spinal cord by the displaced fragments. Indeed, the cord may be completely torn across at the time of the accident.

In recovery from paralysis after an operation upon the fractured bones, a very erroneous deduction might be made, the recuperative powers of nature being liable to be mistaken for the results of an operation. Thus, in some of these injuries, concussion of the cord may happen, and from the paralysis caused by it the patient may recover.

It should not be forgotten that the operation may aggravate one of the secondary effects of this injury—inflammatory softening of the spinal cord.

This operation, originally, we believe, recommended by Heister, and within the last few years revived by Gurlt and M. Félizet, does not seem to have been lately repeated, if we may judge by the current surgical literature.

The editor has fallen into an error regarding one of the modes of dealing with the fracture of the lower end of the radius, known in Ireland under the name of Colles's fracture, Mr. Colles having so accurately described its symptoms, although it was known to Pouteau and some other writers subsequent to him. We allude to the use of pistol splints for the treatment of this fracture, which is attributed by the editor, and many other writers, to Nélaton. This mistake of the editor is the more surprising, Nélaton being frequently quoted as an authority in this article on various questions connected with fractures.

Speaking of Dupuytren's cubital splint, the editor states that—"The apparatus recommended by M. Nélaton is very similar to that just described, and is identical with it in principle; the use of the curved dorsal splint, instead of the ulnar splint of Dupuytren, constitutes the only difference of importance. Instead of the ulnar splint, M. Nélaton has since used a dorsal splint, curved at its lower end in the shape of the handle of a pistol, and very similar, therefore, to that recommended by Mr. Smith."

This is clearly a mistake, for M. Nélaton does not mention the pistol splint in the edition of his work to which the editor refers; neither is there any notice of it in his second edition, now in course of publication.

The chapter on "Fracture of the Neck of the Femur" is excellently put together. We think, however, that, instead of referring the reader to the article on "Diseases of the Joints," for the description of the symptoms of chronic rheumatic arthritis of the hip-joint,

which in many respects resemble those depending upon fracture of the neck of the femur, it would have been better, for the sake of comparison, were they placed beside one another.

The editor does not seem to have appreciated the great advantage of the so-called American principle applied to the long splint in the treatment of fractured shaft of the femur. We believe that better results can be obtained from the American mode of applying the long splint than from the splints of Desault, Boyer, or from any similar apparatus in which the foot is secured to the outer splint.

The editor does not agree with Dupuytren, "that the fracture of the fibula, from *eversion* of the foot, is always preceded by rupture of the internal lateral ligament, or fracture of the internal malleolus; on the contrary, it is found that in many cases of simple fracture a little above the ankle, attributed to eversion, and attended with little or no displacement of the foot, the symptoms are confined to the region of the fibula, and there is no evidence of injury in the neighbourhood of the internal lateral ligament or internal malleolus, which would necessarily be the case if the injury to these parts always preceded the fracture of the fibula. It is more reasonable to suppose that the twist of the foot first occasions the fracture of the fibula, and often stops short at this point."

Notwithstanding the plausibility of this argument, it is difficult to understand how the external malleolus could be pressed sufficiently upwards by the outer surface of the os calcis, to cause the fracture of the shaft of the fibula a little higher up, without a lesion of either the internal lateral ligament or the internal malleolus, to allow of sufficient rotation of the os calcis on its antero-posterior axis.

The observations added to the article on "Injury of the Head" are of much practical interest, but we must observe, that we are not so biassed as the editor in favour of the ligature to bleeding vessels in incised wounds of the scalp. We prefer, when practicable, to try some more temporary hæmostatic than the ligature with these divided vessels.

The value of the acupressure needle as a hæmostatic might easily be demonstrated in cases like the following, mentioned in the observations on torn arteries in the scalp. "Pressure," it is stated, "if carefully and accurately applied, will usually suffice to stop all bleeding from the torn subjacent arteries; but, if the hæmorrhage continue, it may distend the scalp to a very great extent, and the artery must then be sought for, and tied."

Instead of following this advice in similar injuries, acupressure should, we believe, have the preference over the ligature, when the bleeding vessel cannot be seized for torsion, sometimes a difficult matter in these wounds of the scalp.

This article is, on the whole, so practical, that we are surprised at the absence from it of allusion to the treatment of gunshot injuries of the skull without trephining, which was so successful, according to Stromeier, in the Schleswig-Holstein campaign. The very favourable results of this negative treatment are startling, when placed in juxtaposition with the results of the operation of trephining in the Crimean campaign. Some surgeons seem completely to overlook the fact that, by using the trephine, they inflict a new injury on the skull, and possibly also on its contents. Suppose it were possible to collect fifty healthy malefactors, under sentence of death, and that permission were given to trephine the skull of each, what, we might ask, would be the total result as regards the effect of the operation on the bone, the brain, and its membranes?

Although a necessary instrument in certain cases, we believe it has been unwarrantably and injuriously used in fractures of the skull.

The "Hernia" article may be called a treatise in itself. It is replete with information on this disease, with which every surgeon should be familiar. In country practice, where consultants cannot always be easily obtained, the practitioner has in this article excellent rules to guide him in the absence of such assistance.

The article on "Hydatids" was a judicious addition to this work, and we hope will have some influence in preventing ordinary serous cysts from being confounded with those of echinococci—a mistake of rather frequent occurrence.

The revised article on "Inflammation" is a most instructive historical and practical account of this process. Every authority of reputation necessary to illustrate this intricate question, is mentioned in it. The opinion of each is critically and sagaciously analyzed, and the probability or the improbability of his views elaborately argued.

The different forms of inflammation are carefully explained, according to the most probable views as to their nature. The editor, in our opinion, correctly excludes chronic rheumatic arthritis from the category of rheumatic gout. We have always held the view that they are distinct affections. He truly observes that chronic

rheumatic arthritis "is a progressive disease of the articular ends of the bones, not complicated with heart or kidney disease, nor accompanied by uric acid in the blood, nor by any considerable fever. Its attacks are of indefinite duration; they affect both large and small joints in persons of all ages, with or without hereditary predisposition; and are usually excited by cold and depressing causes."

We are not disposed to adopt the view laid down in this article, that gonorrhoeal rheumatism should be considered a "petty pyæmia," and for this reason, that it usually, as stated in the article, attacks young men with "light hair and blue eyes." If it were pyæmia, we can hardly think that it would reserve its favours solely for light-haired and blue-eyed persons.

"Phlegmasia dolens" is entitled to a much more extended history than is given to it in this article. It, for instance, sometimes complicates fever, not necessarily typhoid. It was a frequent complication of the epidemic dysentery that occurred in Ireland during the potato famine, and that the propinquity of ulcers to veins was not essential for its development, was proved by its occasional occurrence in the upper extremity.

Our readers who are *au courant* with the present views regarding the blood corpuscles, are aware that pus corpuscles, according to Cohnheim, are white blood cells that wander through the walls of the capillaries into adjoining tissues. This migration is supposed to be effected by virtue of amœboid powers possessed by the colourless blood corpuscles. Indeed, the red cells are also capable, some authorities assert, of similar wandering, which, however, is considered not to be due to spontaneous movements. The "motive power in this instance is the increased blood pressure, necessitated by the retarded blood flow."

The peculiar views of Cohnheim regarding wandering blood corpuscles are by no means new; for Dr. William Addison, as the editor mentions, so far back as 1841, observed an increase of "white blood corpuscles in an inflamed part," and not long afterwards "Dr. C. J. B. Williams noticed this extraordinary tendency to adhere to the walls of the irritated vessel and to each other." They concluded, from these appearances, that the bodies outside the vessel, as well as within its walls, "had escaped in the form of small nuclei, though the act of migration was not actually observed." Men's minds, however, the editor remarks, were not ready for the reception of Addison's doctrines, "or their importance

was not appreciated, and they gradually were forgotten by all save a few, till this research of Cohnheim, when their bearing on the phenomena of inflammation, and their true value, speedily became apparent to all; the more readily, inasmuch as the amœboid characters of pus corpuscles and white blood corpuscles had by this time been generally recognised."

The differences between the views of Cohnheim and those of Stricker are carefully analyzed by the editor.

The remainder of the article is devoted to a critical analysis of:—(1.) the chemical theories of inflammation; (2.) the neuropathological theories of inflammation; and (3.) the treatment of inflammation.

In the description of the antiseptic treatment of wounds we do not think sufficient importance has been given to the great housewife negative remedy for checking fermentatation and putrefaction, namely, exclusion of air.

With regard to carbolic acid as an antiseptic preventive of supuration, our experience differs from that of Lister, under whose treatment, the editor states, the granulating walls of the abscess are not stimulated to fresh production of pus by the presence of putrefying matter.

All we can say is that we have carefully tried this antiseptic system, and have repeatedly seen more suppuration where the carbolic acid was most accurately applied than in other parts of the same wound. Notwithstanding this, however, we are partial to the antiseptic treatment of wounds, which, by-the-by, we first saw practised by the late Dr. Hutton, about thirty years ago, with the antiseptic ally of carbolic acid—creasote, in the form of creasote ointment, an excellent cleanser of foul surfaces.

A very striking exemplification of the antiseptic value of exclusion of air, in the preservation of animal substances, was brought to light when George IV. was Regent, and has been recorded by Sir Henry Halford.

The reader may recollect that, at the time of the Restoration, King Charles II., wishing to re-inter the remains of his father, a search was made for the body, but its resting place could not be ascertained. There were historical reasons, however, for the supposition that it had been placed in the vault of King Henry VIII., under Windsor Chapel, and that the ministers of King Charles II. deemed it imprudent "that his Majesty should indulge his pious inclination to re-inter his father."



On representing to the Prince Regent that some workmen had seen, through an accidentally made aperture in the vault of King Henry VIII., not only the two coffins which were supposed to contain the bodies of King Henry VIII. and Queen Jane Seymour, but a third also, covered with a black velvet pall, which might fairly be presumed to hold the remains of King Charles, the Prince perceived at once that a doubtful point in history might be cleared up by opening the vault. This, accordingly, was done on the 1st of April, 1813.

On removing a black velvet pall off one of the coffins in this vault, the coffin was found to be a plain leaden one, "with no appearance of ever having been inclosed in wood, and bearing an inscription—'King Charles, 1648,'—in large legible letters. This coffin having been opened, an internal, very much decayed, wooden coffin was disclosed to view. The body of the King was found to be carefully wrapped up in cere-cloth, into the folds of which a quantity of unctuous or greasy matter mixed with resin, as it seemed, had been melted, so as to exclude, as effectually as possible, the external air. The coffin was completely full; and, from the tenacity of the cere-cloth, great difficulty was experienced in detaching it successfully from the parts which it enveloped. At length the whole face was disengaged from its covering. The complexion of the skin of it was dark and discoloured. The forehead and temples had lost little or nothing of their muscular substance; the cartilage of the nose was gone; but the left eye, in the first moment of exposure, was open and full, though it vanished almost immediately. . . . The left ear, in consequence of the interposition of the unctuous matter between it and the cere-cloth, was found entire. The pointed beard, so familiar to us in Vandyke's picture of the King, was perfect! . . . The back part of the scalp was entirely perfect, and had a remarkably fresh appearance; the pores of the skin being more distinct, as they usually are, when soaked in moisture; and the tendons and ligaments of the neck were of considerable substance and firmness!"

There were no spray-producers in those days, no carbolised oils, but simply the greasy substance which, in this instance, effectually excluded the air, and the preservative efficacy of which exclusion is familiar to every good housewife.

Some curious illustrations of the habits, and the practice of the old surgeons with respect to bleeding, are given in this article. The late Bishop Bagot, for example, told the editor, that, when a

young man, he was thrown from his horse in Hyde Park, and carried insensible into the barracks close by. Sir Everard Home was sent for, who immediately bled him, but was too drunk to stop the blood. The patient's mother-in-law, Lady Jersey, who was in the room, was expressing great uneasiness at this state of things, and the first thing the patient noticed, on coming to his senses, was Sir Everard muttering, "Who's that — woman in blue?"

So much for the habits, now for the blood-letting:—A man was brought to St. Bartholomew's Hospital with three ribs broken by a fall from a scaffold. He was bled to eighteen ounces; soon afterwards twenty more were taken; second day, twice bled to eighteen ounces; third day, because the pulse was jerky, he was bled again, but the dresser would only take a few ounces. Mr. Lloyd, a fearful bleeder, and Mr. Lawrence, ordered twenty ounces to be taken, after which the "pulse became a mere flutter," and the man died. Such was the practice of some of the "great men of the past!"

As regards the "change of type" theory to account for the change from depletion to non-depletion treatment, we are rather inclined to the view of Dr. G. W. Balfour, who shows in his essay on hæmatophobia, quoted by the editor, "that bleeding and no bleeding are recurrent phenomena." We think, nevertheless, that the generality of practitioners will steer a middle course between bleeding and no bleeding or "hold a middle ground between the 'vampire' and the 'incendiary,'" as Laycock, Gairdner, Stokes, and Richardson, have inculcated. We regret that we cannot follow the editor of this article through the remainder of it. Before we leave it, however, we must express our regret that the possessor of a mind so astute, so critical, and so accurate, as the editor of this wonderful didactic article on inflammation has proved himself to possess, should, from failure of health, have to change the climate of England for one more genial than it. We are sure that every reader of this article, who may be aware of Dr. Druitt's illness, wishes that he may be restored to that condition of health which would enable him to enjoy life, and still further to enrich our literature.

The ophthalmological articles have been excellently edited, and contain a good deal of superadded matter. They are *au courant* with the present rapidly developing ophthalmology.

The article on "Diseases of Joints" likewise contains much new and useful matter; but we find in the observations on foreign bodies in joints that the editor, we believe incorrectly, gives the credit to

Mr. Syme, and M. Goyrand, of Aix, for having simultaneously proposed a method for the removal of these bodies from the knee by means of a sub-cutaneous incision. Goyrand's name should have been placed by the editor before that of Syme, Mr. William Adams having clearly shown that Goyrand's first operation was performed five months previous to Syme's operation. Neither of these gentlemen, however, was the first to perform the operation, Mr. Adams having further shown that they were both anticipated by M. Dupresse Chassaigne. In the *Essais sur la Méthode sous-cutanée*, published in 1841, it is mentioned that he (Chassaigne) had adopted "the plan of dislodging the loose cartilage from the cavity of the articulation by a sub-cutaneous incision, and leaving it embedded in the cellular tissue external to the joint, where it remained without giving rise to further inconvenience." Chassaigne's first operation, as described by Guérin, was performed in May, 1840. He thrust a fine cataract needle under the skin, tore the capsule quite round the loose cartilage, withdrew the instrument, and fixed the parts in the state in which he had put them, with sticking plaster, which he tightened round the foreign body covered by the skin. Afterwards he applied a bandage round the limb, from the foot to the knee, kept it extended, and left it for eight days. After the lapse of this time he found the cartilage adherent in the place where he had fixed it. Guérin, himself, at this time proposed to remove the cartilage by sub-cutaneous incision at one operation. Goyrand, it is but fair to say, "perfected this operation upon the true principles of sub-cutaneous surgery, by first removing the cartilage from the cavity of the joint by a sub-cutaneous incision, and retaining it in the cellular tissue by means of a bandage, and then, after an interval of ten or twelve days, when complete closure of the incision into the joint had taken place, removing the loose cartilage at a second operation." This operation, as Adams again tells us, was not commenced until the 22nd September, 1840, and the extraction was not completed until the 8th October, 1840, so that Chassaigne, some months previously, pioneered the way to this more perfect operation.

The description of "Chronic Rheumatic Arthritis" is very meagre, particularly of the disease when seated in the shoulder, in which joint the rheumatic action may lead to alterations and displacements, as we have already mentioned, that may be erroneously attributed to a partial luxation of the humerus upwards, and rupture of the long tendon of the biceps muscle. The editor is silent on this question in this article, and yet the greater portion of his account of chronic

rheumatic arthritis has been derived from Mr. Robert Adams's work on Rheumatic Gout, and from Mr. Robert Smith's writings on Chronic Rheumatic Arthritis, both of whom have demonstrated that the presumed partial dislocations of the humerus upwards, with rupture of the tendon of the biceps, were almost to a certainty cases of chronic rheumatic arthritis of the shoulder-joint. Although this article on the diseases of joints is very much impaired by the absence of information on this interesting surgical question, nevertheless, we must say that it contains very instructive, historical, and practical information, on joint diseases.

Every reflecting surgeon will acknowledge the truth of the following observations, by Cooper, in the article on "Lithotomy:"—"Perhaps of all the great operations in surgery, lithotomy is that in which great awkwardness, mortifying failures, and dangerous blunders, are most frequently observed. Many a surgeon who contrives to cut off limbs, extirpate large tumours, and even tie aneurismal arteries, with *éclat*, cannot get through the business of taking a stone out of the bladder in a safe, much less a masterly style."

We join him in his regret that in this branch of surgery there are a great number of individuals who "do not profit by these instructive lessons of experience."

The editor of this article on Lithotomy gives some useful hints on the most advisable mode of carrying out the steps of the operation which every young surgeon should study. We concur in every word of his in the following criticism of Samuel Cooper's teaching regarding the internal incisions in the lateral operation. "From the preceding observations it would appear that the late author (S. Cooper) recommends the practice of making the internal incision free—that is, 'a complete division of the side of the prostate gland, and a limited one in the neck of the bladder.' He also assures us that 'he had seen the lateral operation performed an immense number of times,' and that 'in most of these examples the avowed intention of the surgeon was to make a free opening into the bladder.' This may have been true at the time when Mr. Cooper wrote, but it certainly does not represent the opinion of the best operators at the present day. It is now almost invariably admitted that the only safe principles to be adopted are those of moderate incision and gentle dilatation of the parts incised."

The article on "Lithotrity" having been written several years ago by Cooper, and many improvements in the operation and in the

instruments for performing it having been since made, it was found necessary to replace it entirely; and fortunately for the reputation of this dictionary, the task devolved upon the experienced Mr. Coulson, the editor, or rather, we should say the re-writer of this article, who has condensed into a small compass an excellent history of this operation, and concise rules for our guidance previous to and during its performance.

The article on the "Ophthalmoscope" contains minute directions on the use of the instrument, and descriptions of the majority of the ophthalmoscopes at present in use for the examination of the interior of the eye-ball.

"Ovariectomy" is excellently described. Mr. Spencer Wells, the writer of the article upon the operation, tells us that in a total of 224 cases in which he performed the operation, up to the end of July, 1867, there were 158 recoveries and 66 deaths, or a mortality of 29.5 per cent. This was marvellous success; nearly all the structures involved in the operation being, in ordinary surgery, so obnoxious to injury. We, in vain, sought in this article for mention of Ireland, or for mention of the operation having been performed in this country. We have seen Mr. Wells assist at an operation in Ireland, and heard of his having performed the operation in this country. Possibly these Irish ovariectomies are condescendingly included under the denomination "others" in one of the columns of his tables. This abnegation, if we may so express it, of Ireland, is apparent also in some of the other articles of this work, which, to say the least, is not calculated to serve the interests of those who have sunk their capital in its publication.

Though no satisfactory proof has yet been given that the symptoms mentioned in the article on "Oxalæmia," as belonging to the so-called oxalic diathesis, depend upon the accumulation of oxalic acid in the blood; we, nevertheless, agree with those who consider that when oxalate of lime forms a long persistent constituent of the urine, it should not be neglected. The important matter to ascertain in any given case of this kind is, whether it proceeds from food or from any intrinsic process in action in the economy. The dietetic and medicinal treatment, recommended in the article, for persons whose urine contains oxalate of lime, we have been in the habit of following for many years, we may say since the time Dr. Golding Bird gave such prominence to the oxaluria question.

The formation of oxalic acid in the system, however, will some-

times baffle our efforts, and under such circumstances we may only succeed in lessening its amount.

The article on "Fissure of the Palate" contains but little information on the influence of staphyloraphy in the improvement of the voice. We believe that in many of the cases in which this operation has been performed, the voice was not improved. Moreover, we have reasons for knowing that even when the most perfect union follows upon the operation, not only may there be no improvement in the voice, but the food may be regurgitated through the nares.

Unfortunately for surgical science we hear but little of these unfavourable results of staphyloraphy; operative failures not being conducive to popular favour, the surgeon is too often unwilling to let them see the light.

We can confirm the observation as to the almost utter hopelessness of preventing recurrence of cancer of the penis by ablation of the organ, as laid down in this work. It is a rare instance of good fortune, indeed, to find a person escape from recurrence of the cancer. In all the cases we have seen in which the operation was performed for unmistakable cancer of the penis, recurrence either in the groin or pelvis was the result; and in a few of the recurrences in the groin, the ulcerative process opened the femoral artery, and death from hæmorrhage resulted.

The editor's omission of mention of some of the modes of performing circumcision that are still had recourse to deserves a little reproof. For instance, there is no allusion by him to Ricord's well-known circumcision forceps, nor of his method of removing the prepuce. He is silent also regarding the dilator, invented for the relief of the phimosis by eccentric forcible dilatation of the constricted preputial orifice. Although this operation does not seem to have been much favoured by the profession, something should have been said about it in this article on "Circumcision."

We cannot agree in the unqualified advice given in the article on psoas abscess, to insert issues at the side of the diseased vertebral column.

Unless there are symptoms of irritation of the spinal cord, issues, in our opinion, are not useful in strumous disease of the column.

Generally speaking, symptoms that depend upon irritation of the spinal cord subside when suppuration takes place, and in case of the previous insertion of issues, are an indication for their closure.

The account of the different positions psoas abscess may occupy,

in relation to the psoas muscle, has been altogether omitted from this article, and yet they have been mentioned by authoritative English writers on diseases of the spinal column. We are merely told in the article that the matter "mostly enters the sheath of the psoas muscle." Is it possible that the editor has never heard that the matter may be (1) in front of the muscle; (2) at its sides; (3) behind the muscle; and (4) in the centre of the muscle?

The editor's observations on the "Treatment of Piles" with the actual cautery are in accordance with our own ideas on the subject. He tells us that Mr. Henry Smith has adopted this treatment, "as being less painful than the ligature, as being followed by a much more rapid recovery, and as being entirely free from all its dangers, amongst which he especially alludes to pyæmia and tetanus. These statements," the editor goes on to say, "have not been verified by other surgeons who have practised the operation."

The writer knows of one death due to blood-poisoning from this method of treating piles, and, therefore, we are compelled to agree with the editor, that the dangers of systemic poisoning are "just as likely to occur after the operation with the clamp and cautery" as after the use of the ligature.

The article on "Diseases of the Skin" will, we anticipate, be of much use as one of reference. Being, moreover, the work of a dermatologist so eminent as Mr. Erasmus Wilson, it ought to be authoritative on these troublesome affections.

The memoir on "Surgery" is too English, and, therefore, is not so perfect as a dictionary article of this kind should be. It is much too rambling in style, and affords evidence that its author must have jumped from one matter to another, without having treated properly the one he had last left.

In the article on the "Tourniquet" Signoroni is spelled Signorini, which, it is almost needless to say, is incorrect. The article, however, is an excellent digest of our knowledge on the subject.

The article on "Trusses" gives a very meagre description of the varieties of these appliances. L'Estrange's (Dublin) truss is not mentioned, and yet its description was published many years ago. Whenever a radical cure of inguinal or of femoral hernia is capable of being produced by an appliance of this kind, the chances of success with L'Estrange's truss, we believe, will be greater than with any other truss used by the surgeons of these countries. It is stated in the article that Coles's truss is an improvement on the ordinary truss, because of its having a spring in the pad. L'Estrange's truss,

likewise, contains a spring in the pad, which is arranged so that the greatest pressure is made upon the internal ring, and gradually decreases from this point to the external ring. There are few Dublin surgeons who have not had radical cures of hernia from the use of this truss.\*

Notwithstanding the editor's eulogy of Mr. Critchet's method of strapping the leg for the cure of ulcer, we prefer Baynton's method, which, if properly practised, is fully equal to, and not so troublesome to follow.

It is now some time since skin-grafting was introduced for the management of ulcers difficult to heal by other methods, and yet there is no mention of it in this article on ulcers, unless we are, incorrectly, to consider the grafting analogous to what the editor calls "sliding, or transposition," of skin.

With regard to the number of strictures that may be encountered in the same urethra, we are of opinion that the reader should have been warned in the article on "Stricture," that much dependence cannot be placed upon opinions formed regarding multiplicity of strictures, unless they have been verified by necroscopic examination. Experienced fingers may be deceived on this point, and therefore we think that histories of multiple strictures in one urethra should be received with reserve, unless verified in the manner we have mentioned.

This article would do tolerably well for diffusing some ideas on stricture in the form of a pamphlet. But, for an encyclopædian article, it is wretchedly deficient. It gives little information upon matters with which the student should be acquainted, such, for instance, as descriptions of the most important instruments invented for either forcible dilatation, or rupture, or for internal urethrotomy in the treatment of stricture.

We hesitate to agree with the editor, judging, at least, by the records of Perrève, Holt, Hill, Bumstead, Hulke, Vincent Jackson, and those other surgeons who use dilators in the treatment of urethral stricture, that what he calls "a carefully managed dilatation" is, after all, the best method of treating stricture. We are, on the contrary, inclined to the opinion that the urinary organs are least apt to suffer, if at once relieved of the straining efforts to empty the bladder by the use of a rapid acting dilator, than they would be liable to do under the prolonged use of the bougie or



the catheter, which, according to the editor, causes inflammation of the stricture after each introduction.

Stricture dilators, in which the blades are separated by the elevation of slender bars cannot be too strongly condemned, being slow in their action, and very liable to accident during their forced divarication.

The pain caused by the passage of a urinary calculus from the kidney to the bladder is not invariably felt in the situation mentioned by the editor as laid down by Sir Astley Cooper. In the last case the writer saw of this kind, the pain, which was excruciating, was referred to a point just below the ninth rib, midway between the xiphoid cartilage and the spine. The stone was, in a few hours afterwards, voided *per urethram*, and the seat of pain then became tender to the touch. This subsided in a few days.

The great frequency of stone in the East Indies is attributed by Mr. Brett, the editor tells us, to errors of diet by the natives, amongst which rancid sweetmeats and unleavened bread take a prominent part. Whatever may be the cause, there can be no doubt of a remarkable frequency of stone amongst the native Indians. We have recently read of an English surgeon who, at the end of a long life, boasted of having cut, in England, upwards of two hundred persons for the stone. This is nothing, however, to the experience of many young men in India. One of our acquaintance, for instance, has cut above that number in fifteen years, and on one occasion had four lateral lithotomies on the same day. Another gentleman of our acquaintance cut, in the space of five years, in India, seventy persons for the stone.

Although xanthine forms so rare a calculus, only three well-authenticated specimens of pure xanthine calculi being recorded, we believe that there are few uric acid calculi without traces of this physiological constituent of the urine.

Our reading of Dr. Golding Bird's description of the composition of the dumb-bell crystals of oxalate of lime differs from that of the editor, who states that it has been thought that they might be composed of oxalurate of lime, or even be another form of uric acid. "It is, however, now believed that they are really composed of oxalate of lime, as originally described by Dr. Bird." The editor is evidently in error regarding Dr. Bird's original view of the nature of these dumb-bell crystals, Dr. Bird having considered them to be composed of oxalurate, and not of oxalate of lime.

There is no allusion, in the article on "Puncture of the Bladder,"

to the operation of tapping the bladder immediately below the pubis. As we have so often spoken of the shortcomings of articles in this dictionary, we must say, that a surgical dictionary article should contain a description of Voillemier's operation.

For the labour bestowed upon the article "Venereal Disease," the editor deserves much commendation. The student will find in it most important and instructive views upon this too often intractable malady. It, moreover, contains an excellent condensed account of syphilisation, and some very interesting quotations from a record of cases by W. James Lane and George G. Gascoyen, which appeared in the "Medico Chirurgical Transactions."

The reader must not suppose that because we have spoken unreservedly of the omissions of this work, that we thereby condemn it. We cannot, however, help repeating that whereas Samuel Cooper was enabled by his perseverance and industry to leave us such a wonderful literary monument as the previous editions of this dictionary, there is no excuse for its revision not being more complete, particularly when it is considered that the editor has been assisted in this revision by twenty-three associates, many of whom, as he truly observes, are "already distinguished in the department of surgery" which they undertook to revise.

Several of the articles, we must in candour say, are unimpeachable, those for instance by Dr. Barnes, as well as the ophthalmological articles.

A surgical dictionary, to be thoroughly useful as a work of reference, should contain information, both obsolete as well as non-obsolete, on every subject within the domain of surgery; and, therefore, we cannot approve of the wisdom that led to the curtailment of Samuel Cooper's original matter. We think, notwithstanding, that this work is destined to hold, for many a day to come, its position as a standard work on surgery, and that no surgical library could be complete without it.

We regret that it is not now illustrated. Were it sufficiently so, there are not many surgical works at present in circulation that could compete with it, provided its proprietors insist upon its revision being much more than the dovetailing, with the text, of a reviser's own experience.

When another edition is required by the profession, it might be advisable to subdivide the work into four volumes, instead of its present division into two volumes. Publishers as well as authors should remember that very large, heavy, and unhandy works can

only be read with comfort at a desk. A work that weighs upwards of two pounds does not increase the pleasure of a read before the fire. The present edition we have had bound in four volumes, each of which is thin, light, and convenient for holding.

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*Principes d'Electrotherapie.* Par le DR. E. CYON. Paris: J. B. Baillièrre et fils. 1873. 8vo. Pp. 274.

It is a fact as worthy of notice as it is to be regretted, that in medicine, unlike the exact sciences, every branch of it which develops into a special study runs through the same series of errors which beset its predecessors, and the same faults of method are again and again repeated. No department exhibits this more conspicuously than the application of electricity to medicine, for from its birth it has lived and grown in a perfectly independent manner. With the exception of the cardinal works of Duchenne and Remak, few of the modern treatises on electro-therapeutics are, as Cyon remarks, altogether free from the gravest errors, not only against the most elementary principles of physics and physiology, but also against good sense. Facts badly observed or purely invented, ridiculous theories, extravagant hypotheses, impossible explanations, and marvellous cures are all found jumbled together, seasoned with a delusive appearance of scientific investigation, and wrapped in a mystic veil, behind which lurks a half-concealed protestation. As the principal cause which has contributed to shackle electro-therapeutics, we may reckon the prevailing ignorance of neuro-physiology and of physics, the combination of which has effected such splendid results in other branches, for example, in ophthalmology.

Yet, with this one exception, nowhere can we expect more fruitful results from the co-operation of physiology with pathology than in the case of the nervous system, and M. Cyon, convinced that in electricity we possess a remedy against nervous diseases which excels all others, has undertaken the difficult task of laying down the scientific basis of electro-therapeutics, and of showing that there are general principles upon which to found a rational application of electricity to therapeutics. Even now we are in a position to determine the effects which the electric current is capable of exercising upon human nerve and muscle, to examine the modifications impressed upon these effects by the employment

of different sources of electricity, and by change of intensity, of duration, or of direction of the current, and lastly, to indicate the portions of the nervous and muscular systems which are accessible to electric influence and those which are not.

Professor of physiology at St. Petersburg, and a former pupil of C. Bernard, M. Cyon is peculiarly fitted by a liberal education and by his original investigations in nerve-physiology, as well as by special study of electricity in its relations to medicine for such a labour, one of no light difficulty. It is, we venture to say, exactly the kind of book that was wanted, in which the essentials are winnowed from the non-essentials, and it comes, as a friendly light, to guide us through a labyrinth of confusion and spurious teaching.

Certainly the book should not be judged only according to its size, and while it demolishes errors and exposes absurdities, it is not merely iconoclastic, nor does it offer a stone in place of bread, but seeks to give the true interpretation to observed facts, and physical and physiological principles are the pivot upon which every argument turns. Such being the case, perhaps we shall best do the author justice by following his lead step by step, and in presenting our readers with an imperfect analysis of M. Cyon's book, we do so only in the hope of inviting them to an earnest perusal of it for themselves. The text is arranged under six chapters. In the first chapter we have a brief introduction to electrical physics and a critical examination of some of the many apparatuses which have been proposed for medical use. The practical importance of Ohm's law to medical electricity is clearly put, and a lucid exposition of the laws of the propagation of electricity in conductors of different forms is given. This is a much neglected point in the ordinary treatises, and yet without it it is quite impossible to understand the diffusion of electric currents in the human body. Cyon justly rejects Smee's battery as unsuitable for 'therapeutical indications, and regarding, in common with most others, Daniell's arrangement as possessing the most constant electro-motive force, he adopts for his own use Siemens' modification of Daniell's cells, furnished with Siemen's rheostat, for the exact graduation of the intensity of the current. The best induction-apparatus for medical purposes is, according to the author, Du Bois Reymond's; but on the whole, the choice of an induction apparatus is much less important than that of a constant battery. The second chapter is devoted to general electro-physiology. After a sketch of the

history and laws of the nervous and muscular currents in a state of rest and of excitation, we meet with a succinct account of the somewhat perplexing, but all-important subject of electrotonus (*i.e.*, the modifications in the normal nerve-current and nerve irritability produced by a continuous electric current). The significance of Pflüger's law as applied to man is shown, and several crucial verifications of it by M. Cyon himself are adduced. We may observe, in passing, that we also owe to Pflüger a more general formulation of Du Bois Reymond's law of irritation, and, indeed, many of the most valuable truths in electro-physiology.\* The third chapter deals with electro-physiology in the living human subject, the foundations of which rest upon Pflüger's discoveries. On the important subject of the relation of the degree of muscular contraction to the exciting force, Cyon has made some valuable experiments on man by the aid of a simple myograph, which he describes and figures, and the result is that the principles which Fick deduced by operating on frogs, hold good for the nerves of the human body. Such investigations are an effectual rejoinder to those objectors who wrap themselves up in the comfortable delusion that electro-physiological laws are not valid for man, and silence those who assert that the application of electricity to medicine is devoid of scientific foundation. Helmholtz's personal observations on the galvanic excitation of the optic nerve are cited, and Cyon, maintaining with Erman and Weber, that electric irritation is incapable of producing specific acoustic phenomena, scouts the observations and singular theories of Brenner on this point, which have attracted some attention. The fourth chapter discusses the effects of electricity upon the different tissues. Here we have carefully to distinguish between two perfectly distinct things, which are perpetually confounded, *viz.*, the laws of the special physiology of the nerves and the general laws of nervo-muscular excitation by electricity. Electricity exercises absolutely the same molecular action upon every nerve, be it motor, sensitive, regulative, or secretory; but the palpable effects—*i.e.*, their "specific energies"—are, of course, different, because the nerves terminate in different ways.

Here, for the first time, the physical principles which underlie the method of local electrization are clearly taught, and the cloud of mystery which enveloped them, even after the valuable empi-

\* See also the excellent article on Electricity in the *Nouveau Dict. de Méd. et de Chir.*

rical researches of Duchenne and others, is dispersed. Galvanization of the brain, so much lauded by Benedikt, although certainly feasible, is absolutely rejected from practice by M. Cyon, not only on account of the impossibility of localizing the action of the current, but also of employing *with safety* a sufficiently powerful current. But it is quite a different matter with the elongated spinal cord which we can influence by comparatively feeble currents, and the electricity will travel by secondary circuits between the vertebræ, and along the blood-vessels, and so reach the cord. It is essential to remember, that in the application of electricity to the body we have always to take into account secondary or derived circuits, and in the case of the brain and spinal cord, which are enclosed in bony envelopes, but pierced with numerous apertures, especially in the latter instance, it is just *because they are surrounded by a badly conducting medium* that a current will propagate itself by preference in the nervous tissue, which offers scarcely  $\frac{1}{10}$  the resistance of bone. If the spinal cord were surrounded by better conducting structures, *e.g.*, muscular tissue, its galvanization would be attended with great difficulty and even danger.

The so-called galvanization of the sympathetic has given rise to much wild speculation and ill-founded methods of practice, and Cyon does well to expose the inconsistencies and errors which are commonly bound up with this question. It is impossible to irritate the sympathetic nerve at the side of the neck without, at the same time, influencing other important nerves, such as the vagus and hypoglossal.

The fifth chapter lays down some principles for the use of electricity as a diagnostic agent, a method of examination which has not yet gained the acceptance which it undeniably merits. There is no such thing, according to M. Cyon, as a specific electromuscular excitability or sensibility, and in examining muscles we must always distinguish between their *excitability* (*i.e.*, the property of passing from a state of rest to one of activity), and their *contractility* (*i.e.*, capacity for work). One of these functions is seldom modified independently of the other, although it is often a difficult matter to interpret the relative amount of disturbance of these two functions separately. As to the electric examination of the sympathetic, we have no means of producing in the living subject any probable re-action by irritation of that ill-used nerve, so often doomed to suffer vicariously for other organs.

The last chapter treats of a branch of the subject which has given rise to much discreditable controversy among electro-therapeutists, viz., the difference in the effects produced by induced and constant currents. Stripped of all misconception, the case is reduced to this, that the two kinds of currents differ fundamentally only in their origin, duration, and intensity, the two latter characters being far the most important. Neumann's conclusive experiments are quoted, which prove that when, from pathological causes, nerves or muscles lose their excitability to induced currents, and retain it towards constant currents, this is *due solely to the momentary duration of the former*. Moreover, this apparent paradox is really in accordance with Pflüger's law, and Brücke has lately shown that in curarized frogs the nerves and muscles behave towards induced and constant currents similarly to what is often observed in cases of traumatic and other forms of paralysis.

The pathological changes which lead to this remarkable change are not yet cleared up, and M. Cyon wisely forbears from adding any crude speculations of his own to the attempts which have been already made to solve it. The other important differences between the two currents are clearly explained on physical and physiological principles, and the work closes with a refutation of the oft-rebutted assertion of Duchenne, that there is an essential difference of physiological action between the induced currents of the primary and secondary coils of an ordinary inductorium.

In conclusion, we would simply say that all who are in any way interested in the medical applications of electricity will find here at last a true appreciation of its position, and a rational scientific basis for its employment, and it will be their own fault if they ignore the aid which M. Cyon so opportunely affords them.

W. G. S.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

GEORGE H. KIDD, M.D., President.

R. W. SMITH, M.D., Secretary.

*Aortic Patency; Hemiplegia; Mitral Obstruction; Idiopathic Aneurism of Ulnar Artery.*—DR. NIXON said, the man from whom these specimens were taken was a wire worker, aged about twenty-three, admitted into the *Mater Misericordiæ* Hospital on the 13th of September last. Prior to his present illness his health had been bad; he suffered from three attacks of acute rheumatism, and lately was subject to palpitation of the heart and a feeling of cardiac distress. About five o'clock on the morning of admission he awoke with a violent pain in the back of the head. Notwithstanding this, he dressed and went to his work as usual. The pain in the head became more severe, and about seven o'clock, whilst cutting across some iron rods, he suddenly felt a tingling sensation in the little finger of the right hand. The tingling involved the remaining fingers, extended up the arm and right side of the face, then suddenly shot down the right side of the trunk to the right leg. He called for help, walked or limped a few paces towards a fellow-workman, and then fell helplessly to the ground. Consciousness was unimpaired. He understood everything said to him. About three hours afterwards Dr. Nixon saw him in hospital. He was perfectly collected, and described to him the nature of his attack: his speech was hesitating and somewhat inarticulate, but there was no paralysis of speech; there was neither aphasia nor amnesia; there was simply difficulty of articulation, or, as it is called, "thickness of speech;" there was no paralysis of the tongue. The muscles of the right side of the face were flaccid; it had lost its expression. There was complete motor paralysis of the right upper and lower extremities. On examination of the affected part with the *æsthesiometer*, he found that sensation was unimpaired. The temperature in the right axilla was



100° F., being nearly a degree higher than that of the left one. There was sweating of the right side of the face and upper extremity. On placing his hand over the heart he felt a well-marked fremitus, and on stethoscopic examination, a loud double bruit was heard at the base. The diastolic bruit was of a peculiarly prolonged character; it gave one the idea of a tongue of fibrine being attached to one of the valves, and thrown into vibrations by the regurgitating blood. The first sound was heard clear and free from murmur; a little to left side of impulse beat there was marked visible pulsation of the vessels; the pulse was regular, collapsing, and hammer-like; there was not much increase of cardiac dulness, and no displacement of the apex beat. The urine was normal in specific gravity, and free from albumen. The diagnosis then made was, aortic obstructive and regurgitant disease, with the probable detachment of a portion of fibrine from the diseased valves, producing an embolon of some branch of the left middle cerebral artery. In course of time complete motor power returned to the right upper extremity, the face regained its expression, and partial power returned to the right leg, but he still "dragged" it after him. The area of cardiac dulness had increased considerably; the heart underwent the displacement downwards and to the left side; and he might say here, that towards the end of the case, the apex beat was felt on a line with the left nipple, and about one inch below it. About the middle of November, his colleague, Dr. Hayden, in examining the case with him, called his attention to a bruit heard at the apex of the heart. He had no difficulty in recognizing it as pre-systolic in character. It was followed by a clear first sound. Dr. Hayden at this time diagnosed a contracted mitral orifice, now superadded to the aortic disease. Although he (Dr. Nixon) was satisfied that the murmur heard at apex was mitral and pre-systolic, yet he found it difficult to conceive that the auriculo-ventricular orifice should have become contracted, without any change being manifest in the physical condition of the patient. He was on the whole rather better; there were no pectoral symptoms to speak of, and there still existed the peculiar pulse of aortic patency. Having regard to the pre-existing aortic disease, and the dilated condition of the left ventricle, with the probable large amount of blood regurgitated into it, it occurred to him that this blood, by flapping over the curtains of the auriculo-ventricular valve, against the mitral orifice, prior to the auricular systole, might in that way obstruct the passage of blood from the auricle into the ventricle during the auricular contraction, and thus develop a bruit before the first sound.

Whilst under treatment a new point of interest presented itself. A pulsating tumour was discovered about an inch below the bend of the right elbow, over the site of the ulnar artery. It gave no annoyance to the patient, and its discovery he might say was accidental. The tumour was deeply seated beneath the flexor muscles; it possessed an expansile

pulsation, which was arrested by compressing the brachial artery; during the compression the tumour felt soft, and it was reducible in size. When the compression was removed it became suddenly dilated. Over it was heard a loud systolic whiz. The pulse in the ulnar artery was not perceptibly reduced in volume, differing in no respect from the pulse in the opposite limb. On being questioned, he told us that about two months ago he recollected having worked one day unusually hard; from early in the morning until night, he was cutting iron wire coils into lengths for garden pailings. The scissors which he used for the purpose was a very blunt one, and it required a considerable and sudden muscular effort to sever the wire. That night he complained of soreness about the elbow, and some stiffness in the hand; he noticed a slight swelling in the forearm, just below the joint. Next day he went to work as usual, and although there was some uneasiness in the arm, he took no further notice of it, nor did he mention anything in connexion with the tumour until his attention was called to it. There was no difficulty in recognising the case as one of aneurism of the ulnar artery. One peculiarity existed, viz., that the ulnar pulse was unaffected in volume. During the period of his stay in hospital, the aneurism increased considerably in size; the girth of the forearm, across the site of the tumour, was three quarters of an inch more than that of the opposite limb. He began to complain of cramp, chiefly in the hand. He was unable to close the hand, although at the time the right arm had completely regained motor power, and it was remarked that the little and ring fingers possessed least power, owing probably to pressure on the ulnar nerve. Under some of the usual plans of treatment the tumour became apparently consolidated, and the bruit in it ceased. The man left hospital on December 23rd. He heard nothing more of the patient until the 25th ultimo, when he again presented himself at the hospital and was admitted. He was extremely anæmic. The face, neck, and legs were œdematous. He complained greatly of cough, accompanied by slight hæmoptysis. There was great tenderness over the region of the liver; it was enlarged to a very considerable degree. He had suffered from an attack of jaundice previously to admission, which, however, had passed away. The urine was small in quantity; its specific gravity was 1.025; it contained a large quantity of lithates, and it was albuminous. The cardiac dulness had greatly increased in extent. The pre-systolic bruit was audible at the apex. The double bruit was heard at the base. The bases of both lungs were dull and crepitating. On the 3rd February the hæmoptysis, which had ceased, suddenly returned; respiration became greatly embarrassed; the pulse became quick and feeble; the lips were livid; acute agonising pain was experienced about the heart, and about four o'clock on the morning of the following day he died. Dr. Nixon said he should add that on the previous day the mitral bruit had ceased to exist. With

reference to the ulnar aneurism, the tumour, though apparently smaller, was soft and fluctuating; its expansile impulse had returned. The bruit was again heard over the sac.

In making the *post-mortem* examination he was kindly assisted by Dr. Ward. Both lungs were in a state of pneumonia, liver enlarged, congested, and its cells filled with granular fat. The heart, with its contained blood and the thoracic aorta, weighed 31 ounces; emptied of blood it weighed 25 ounces. The right auricle is normal in capacity. The right ventricle is much diminished in size, owing to the encroachment on its cavity by the ventricular septum. The left auricle is somewhat dilated; its walls are normal in size. There is some contraction of the auriculo-ventricular opening; it barely admits the extremities of two fingers. The cavity of the left ventricle is immensely dilated, and if they took into account what ought to be the relative size of the mitral opening, he thought he was justified in saying that the auriculo-ventricular opening was diminished considerably. On the auricular surface of the mitral curtains were a number of beads of lymph. The aortic orifice was the seat of exaggerated disease. Large warty vegetations were attached to all the valves, and a large fibrinous mass might be seen hanging down in the ventricle—attached above to one of the semilunar valves, below lying free. This tongue of fibrine must, during the regurgitation of the blood, have been carried over against the anterior segment of the mitral valve. The ascending aorta presented some traces of atheromatous degeneration. It was a question to be determined whether the contraction of the mitral opening which existed presented the pre-systolic murmur, or whether it was caused in the way previously surmised. The beads of lymph found on the auricular surfaces of the mitral valves were, certainly, of themselves sufficient in amount to produce obstruction to the passage of the blood into the ventricle, and he thought, from the dilated condition of the latter, the large reflux of blood from the aorta must have brought the mitral curtains towards each other, thus exposing their roughened auricular surfaces to the passage of the blood, and thus producing the obstructive murmur. On microscopic examination of the heart, many of its fibres presented the appearances of advanced fatty degeneration. He examined carefully the base of the brain for evidences of the cause of the hemiplegia. He found no disease of the vessels of the left side, and though he traced carefully the branches of the left middle cerebral artery, he found no traces of embolic infarction in them. On the right side he found a small branch of the right middle cerebral artery converted into a fibrous cord. Not having found any cause for the paralytic seizure at the base of the brain, he then proceeded to examine it from above downwards, and making on the left side the section of the centrum ovale minus, he observed a dark brownish clot (evidently altered blood) in the middle of the medullary

substance. This he found proceeded down the fissure of Rolando, and thence into the lateral ventricle, where it lay immediately on the outer side of the corpus striatum. It lay altogether free of the optic thalamus, which explained the absence of paralysis of sensation. He presented to the Society the specimen of idiopathic aneurism of the ulnar artery, the first of its kind shown in the Pathological Society of Dublin or of London. The tumour was situated on the inner side of the ulnar artery, about an inch and a-half below the bifurcation of the brachial artery. Lying immediately along its inner side was the ulnar nerve. The sac of the aneurism contained fluid blood.—*February 8, 1873.*

*Acute Miliary Tuberculosis.*—*DR. YEO* showed the lungs, kidneys, and spleen of a female, aged fifty-two, who had been sent from the Union to the Hardwicke Hospital, on the 21st of February, as a case of typhus fever.

While in hospital she suffered from intense general febrile symptoms, but had no eruption. Her temperature was high, heart's action very rapid, and she had great dyspnoea, frequent cough, and expectoration slightly tinged with blood. Physical examination gave fine sibilus over the front, and coarse crepitus over the posterior aspect of the chest. Posteriorly the chest was a little dull; but anteriorly the pulmonary tone was normal.

While in hospital she was considered to be suffering from asthenic broncho-pneumonia, and was treated accordingly. She died on the 28th of February, about fourteen days after the commencement of her illness.

*Post-mortem examination.*—On opening the thorax the lungs were found not to retract, but to fill the entire chest like casts of the pleural cavities. They were, however, unconnected with the thoracic wall by adhesions, as both parietal and visceral pleuræ were quite healthy. Their surface was of a dark reddish-brown colour, and numerous small, hard nodules could be felt like grains of shot immediately under the serous covering. The cut surface was of a dark purplish-grey colour, and presented innumerable small greyish or yellowish specks throughout its entire extent. In the apices of the lungs these specks were yellow and opaque, some attaining the size of a grain of wheat; while in the lower lobe they were grey and translucent, and varied in size from that of a pin's head to the smallest object visible to the unarmèd eye. These little bodies were found to correspond to the hard nodules felt on the surface of the organs. Both lungs were intensely engorged, and contained but little air posteriorly, while anteriorly they were distended with air, and congested. The bronchial mucous membrane was of a livid red colour throughout.

The spleen was very large, and of a dark purple colour. The cut

surfaces were closely studded with greyish-yellow spots, about the size of a large pin's head.

The kidneys were about normal in size, and the parenchyma appeared quite healthy. Here and there, however, throughout both the cortical substance and the pyramids were seen small yellowish spots. These were generally larger, more variable in size, and more sparingly deposited than those in the lungs or spleen.

The liver was large, pale, and flabby, presenting to a well-marked degree the characters of fatty degeneration—a considerable amount of greasy material was left on the dry and clean blade of the knife with which the section of the organ was made. No disease could be found in any of the other viscera except the uterus, which had a few small hard fibrous tumours on its anterior surface. In no organ could any appearance like caseous degeneration be found. The microscope showed the smaller grains in the lungs and spleen to be good examples of miliary tubercles in their early stages.

Dr. Yeo said this was a good example of true tuberculosis, and it showed well how deficient were our powers of distinguishing this from some other acute blood diseases. For he considered that this sudden deposition of miliary tubercles in different organs, accompanied, as it invariably was, with intense pyrexia, should be regarded as an acute blood disease, very analogous to the exanthemata; but having this difference, that the eruption was evolved in the parenchyma of certain viscera, or on the membranes lining internal surfaces, instead of appearing on the external skin. That the disease could be caused by bad food, dirt, overcrowding, &c., he was not prepared to state; but he never saw a case of true primary tuberculosis in which these circumstances had not existed before its development. He thought this disease should not be confounded with acute phthisis, which is confined to the lungs, and usually depends upon rapid caseous destruction of the pulmonary tissues, and a concurrent deposit of miliary tubercles in the adjacent parenchyma.—*March 1, 1873.*

*Enlargement of the Solitary Glands of the Ileum: Latent Scarlatina.*—DR. ARTHUR WYNNE FOOT exhibited the viscera of a little girl, aged ten, who, he considered, had died of latent scarlatina, with pulmonary complications. She had been going to a school in which children had scarlatina; but she had not apparently taken the disease. She got ill with what seemed to be a common cold, but getting suddenly worse, she was carried in great haste—in her father's arms—to the Meath Hospital, on the morning of Wednesday, 12th February, 1873. She was at once admitted, and put into a warm bed. She looked as if she were dying; she was livid, cold, almost breathless. As her mother reported that she had made "next to no water" for two or three days, Dr. Foot passed a

catheter and withdrew all the urine in the bladder, which amounted to ten drachms, and was turbid, acid, albuminous, of a pale orange colour, and which, although it stained white filtering paper, did not give with nitric acid any indications of bile pigment. She made no complaint of pain, her respiration was extremely rapid—it was 80 per minute, as the mean of three separate observations; the pulse was 138; the temperature, subnormal, was 94·8° Fahr. The left side of the chest was dull, and gave tubular breathing mixed with rhonchi; she lay on this side, and made slight and ineffectual efforts to cough. She died on the 17th—six days after her admission; the temperature continued subnormal until the day of her death, when it was, in the morning, 101° F.; in the evening, 99·9°. The average rate of the pulse, while she was in hospital, was 120, ranging from 74 to 142; that of the respiration was 55, ranging from 82 to 42; the average temperature was 96·8° F., ranging from 94·8° F. to 101° F. The urinary suppression did not continue. She derived but little benefit from treatment, the lividity of the surface and the dyspnoea continuing to the last.

The body was examined twelve hours after death; it still retained some warmth, although the weather was very cold; desquamation was noticed on the palms; a rosy blush, especially on the left cheek, had replaced the cyanotic hue present in life; rigor mortis was strong, the fingers were firmly flexed; hypostatic congestion was excessive; there were some livid mottlings on the front of the thighs and on the lower part of the abdomen; there was œdema of the feet and legs.

Both pleuræ contained some turbid, pale greenish-yellow serum; there were no adhesions which offered any resistance to the removal of the lungs; one limited patch of recent lymph existed on the outer border of the left lung. The entire lower lobe of the left lung, and all but the apex of the upper lobe, were consolidated by a deposit which showed itself externally here and there by smooth, broad elevations of the lung surface, making cream-coloured protuberances, paler in colour than the surrounding parts. Similar consolidations, but of much less extent, appeared in the apices of the upper and of the lower lobes of the right lung. These deposits cut with a greasy firmness, like *paté de foie gras*: they were airless as contrasted with the more spongy lung around, from which they were otherwise very indistinctly defined; their section was slightly granular, not very dry, not very friable, exhibiting no appearances of central softening. A scraping from the fresh surface showed, with  $\frac{1}{2}$ -inch objective, hosts of uniform-sized, round, distinctly-outlined cells, not nucleated, but thickly dotted; much molecular matter, and brownish, cloudy, amorphous matter. There was nothing like a “tubercle” in any part of the lung, nor a “grey granulation.” The peri-tracheal glands were enlarged and conspicuous; the bronchial angle was occupied by a succulent gland the size of a large horse-chestnut; the mucous membrane

and the air passages were swollen, deep red, and covered with frothy mucus.

In the anterior mediastinum there were some remains of the thymas body; the left half of the pericardium was notably vascular as contrasted with the right; the sac contained a small quantity of serum; the cardiac veins were engorged and prominent. The right auricle was distended with a stiff, black coagulum, which was unwilling to leave the divided *venæ cavæ*; among the *musculi pectinati* of the appendix were rooted some ancient, fibrinous thrombi, white, softening in the centre; on squeezing them with the finger, for the purpose of detaching them, a puriform liquid oozed out from a small cavity the size of a kidney bean: this puriform liquid showed with  $\frac{1}{2}$ -inch objective, bodies of the size and shape of pus corpuscles, with bright oil drops, much granular debris and molecular fat. The foramen ovale was imperfectly closed, a slit-like aperture at its upper border admitting of the passage of the stem of a clinical thermometer; there were no traces of the greater Eustachian valve. The coagulum in the right auricle was continued into the right ventricle, and thence, with a constriction at the ostium, into the pulmonary artery, branching off therefrom towards the lungs. The clot in the pulmonary artery was more white than black; the left auricle contained a black clot, and the left ventricle had much fibrine entangled among its *carneæ columnæ*; between the deep layers of this stratified fibrine and the ventricular endocardium were a series of small encysted softenings with liquid puriform contents. In the inter-muscular spaces at the apex of the right ventricle, below the very strongly-marked moderator band, was a white, gluey, softening deposit of fibrine. The thoracic aorta contained some black blood, adhering tenaciously to its lining membrane, and which withstood the flow of a good deal of water before it came away. The interior of the aorta, when cleaned, was of its natural colour. The *œsophagus* was purplish, from unusual vascularity; its mucous membrane was covered with little chippings or excoriations. The liver,  $31\frac{1}{2}$  ozs., was light brown, firm, with hard rounded edges, finely spotted with minute red dots, especially on the lateral portions of the right and left lobes, smooth-capsuled, pale on section; gall bladder small and empty. Spleen weighed 4 ozs., was adherent by its apex to the diaphragm, purplish red, had one large and about eight smaller crimpings along its inner margin, and two grooves on its outer border. On its convex surface were three Y-shaped depressions grooved with veins. The kidneys (right  $8\frac{1}{2}$  ozs., left  $3\frac{1}{2}$  ozs.), were normal in shape, colour, size, and internal appearances. The stomach was ecchymosed at the cardiac end, and its mucous membrane bespattered with blotches, and dots of extravasated blood and congested vessels. These ecchymoses and discolourations had increased so much when I again examined them, five hours later, that I think them all *post-mortem* changes. The entire mucous tract of the small

intestines, from the duodenal orifice of the common duct downwards, was strewn with hard greyish beads, the size of pins' heads, as if grains of sago or mignonette seeds had been sprinkled over the parts. None of the agminated glands were affected; the firm, whitish, bead-like granulations were as numerous on the *valvulae conniventes* as on the intervening membrane; 150 could be counted easily, strewn over any two inches of the bowel; none of them were ulcerated. The glandular apparatus of the large intestine presented no anomaly. Held up against a strong light, a piece of the small intestine looked as if infiltrated with shot. Many of the mesenteric glands were enlarged, especially near the ileo-cæcal valve; the vermiform appendix was four inches long. This condition of the solitary glands—"psorenterie" of the French pathologists; the "non-typinous intumescence of the follicles," of Rokitsansky; the "granulations of the intestinal mucous membrane" of others—is held by Harley (*Med. Chir. Trans.*, 1872), to be the most characteristic feature in the pathology of scarlatina, for which he would propose the pathological name of "Febris lymphatica." The child from whom these specimens were removed had been exposed to the contagion of scarlatina (but was not supposed by its parents to have taken it), and was brought to hospital, moribund from lobular pneumonia and pleural effusion. There had been no diarrhoea while under observation.

Dr. Foot considered the case to be one of latent scarlatina, in which death had ensued from pulmonary complications.—*March 1, 1873.*

*Enormous Aggregation of Extraneous Matter in the Stomach.*—DR. GERALD YEO said the specimen which he now exhibited had formed an abdominal tumour, concerning the nature of which he had been unable to form any satisfactory conclusion during life.

The subject from which it was removed was a little girl, who had died in the Hardwicke Hospital on the 25th of March. Her mother stated that she had always been a healthy child, never having been a day sick, except when she had the whooping cough some months back, and about a year and a half ago, when she had passed a quantity of worms. The three months before she came under observation she had spent in the Union Hospital. In February she was brought to the dispensary attached to the House of Industry Hospitals, suffering from a thick crop of itch, and a peculiar doughy swelling in the abdomen. A tumour was found in the superior part of the abdominal cavity; it was hard, with well-defined margins, and oblong in shape, extending across from one hypochondrium to the other; it was capable of considerable vertical movement; it was quite unconnected with the liver, the edge of which could be felt quite distinct from it; it was not attached in the region of the spleen; its surface felt very hard, slightly irregular, and rounded; it resembled neither in shape, feel, nor position



any of the abdominal viscera. It did not cause her any inconvenience, and prolonged examination did not produce any pain. When the skin affection was cured, the mother considered she was quite well, and did not attribute any importance to the abdominal swelling, for she said the child had had a "high belly" since she was two years old, and the lump had been there fully a year. On the 15th of March she was again brought to the dispensary, suffering from severe purging and vomiting; she complained of no pain, had a good appetite, and had not eaten anything that could disagree with her. She was then admitted into hospital, the vomiting and purging continued unchecked, her appetite was pretty good, and she had no pain or uneasiness, except from a cough. Two days after her admission, her appetite completely failed, and she would not eat anything; vomiting, purging, and cough got rather worse. On the 23rd she got a sudden attack of agonizing pain in the belly, which lasted about half an hour. The vomiting and purging remained unabated till her death, which occurred on the 25th, shortly after a second and more severe attack of colic. During her stay in hospital she exhibited a most peculiar temperament; she remained perfectly quiet, and never complained except during the attacks of colic.

*Post-mortem examination*:—The body was not much emaciated, though small for her age. The heart and pericardium were perfectly healthy. The lungs were engorged posteriorly, emphysematous on their anterior inferior margin, and in the apices were two or three small masses of caseous pneumonia. When the abdomen was opened, he (Dr. Yeo) was still at a loss as to the exact seat occupied by the tumour, as the peritoneum seemed quite healthy, and all the viscera in their normal situations; the stomach, which was somewhat larger than natural, occupied the position in which the tumour was felt during life, but it was quite healthy to all appearances. Its cavity, however, was found to contain this extraordinary mass of heterogeneous materials, matted together into a hard, firm tumour, which accurately filled the organ, and measured ten inches in length, and eight inches in circumference. The extremity corresponding to the pylorus was jagged as if recently broken off, the rest of its surface was covered with a soft, creamy slime, which separated it from the mucous membrane. It seemed to be composed chiefly of straw, chips of wool, grass, cord, thread, pieces of blanket, and various other kinds of woollen materials, all matted into a dense felt. Towards the end of the jejunum was a smaller mass of similar structure, firmly impacted in the gut; the upper end of this piece was jagged like the pyloric end of the stomach mass, while the lower extremity was tapered off gradually, and terminated in a few long cords and blades of grass. The rest of the intestinal tract was quite empty; the mucous membrane throughout was pale and appeared healthy, except on the concave side of

the duodenum, where an irregular bright yellow ulcer, about the size of a shilling, seemed to have eroded the wall of the intestine, and made it firmly adherent to the head of the pancreas. The other viscera appeared healthy.

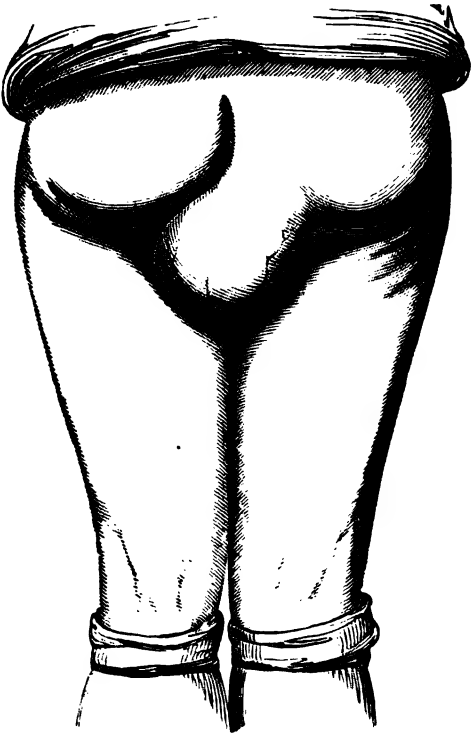
Dr. Yeo said the case was of interest, as showing what difficulties of diagnosis might occur in the disease called *Pica*, when there was no history of any peculiarity in the habitual ingesta. Here, even after the child's death, no account of any peculiarity of appetite could be elicited from the mother. The aggregation was unusually large, and showed how great an amount of insult the stomach can bear without any remarkable symptom; for here we have evidence of a mass occupying a great part of its cavity for a year without much inconvenience; and in all probability the intense symptoms which preceded the patient's death were due to the separation of a portion of the mass, and its impaction in the jejunum. The ulcer in the duodenum, which was evidently of long standing, seemed to support the view that this aberration of appetite was dependent upon some pre-existing irritation in the alimentary canal. But he considered this relation of cause and effect might also be transposed as far as this case was concerned.—*March 29, 1873.*

*Ischiatic Hernia.*—Dr. F. C. CROSSLÉ laid before the Society a case of this rare form of hernia which occurred recently in his practice in a remote district in the North of Ireland, and an account of which might be said to possess one or two features of interest to the Society. In the month of August last, a strongly-built healthy-looking woman, aged about forty, came to him concerning a tumour situated on the right buttock. On questioning her with regard to the history of this tumour, he ascertained that about two years previous to the date she had, while in the act of stooping and assisting to lift a heavy iron plough into a cart, became suddenly conscious that something had given way in a situation deeply seated, and corresponding with that now occupied by the tumour; that a dull pain remained for some time in the part, rendering her slightly lame, but unattended by any fever or other complication calculated to prevent her from paying her accustomed attention to domestic duties. Regarding the occurrence as one of trifling importance, she did not at the time seek medical advice, but some three or four months subsequently, on discovering a small tumour, about the size of a pigeon's egg, situated on the lower margin of the glutæal fold on the same side, she became frightened, and consulted her usual medical attendant concerning the cause of her alarm. Mentioning to him the occurrence of the strain and the size and situation of the tumour, she suggested to him the fear that she was ruptured. No examination of the tumour was made at the time, and she was assured that rupture in such a situation was entirely out of the question, and that the tumour need afford her no anxiety. Encouraged

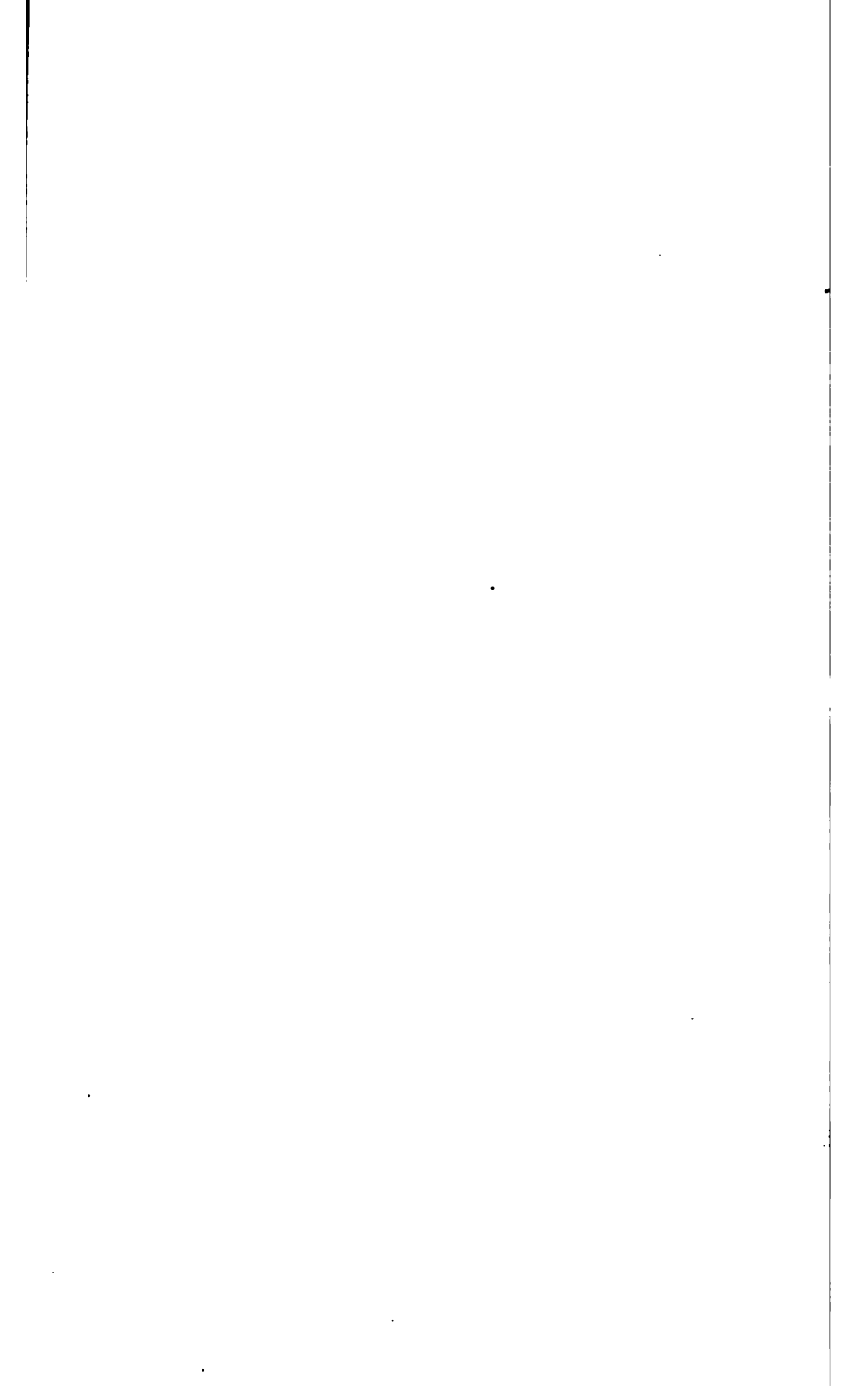
by this assurance she returned home, but, contrary to expectation, the tumour kept gradually increasing in size, until at last it attained such inconvenient proportions that she was induced to consult several other surgeons, himself (Dr Crosslé) among the number.

Different theories seem to have been propounded with regard to the nature of the tumour, one of those whom she consulted assuring her that it was "a cancer," but that its situation would render its removal a hazardous undertaking. On proceeding to examine his patient, he found a tumour springing from the lower border of the right gluteal fold, its apex lying across the back of the left thigh immediately below the gluteal fold of the left side. It was at the time about the size of a well-formed foetal head at full period, and distinctly ramifying over its surface were several veins. To the touch it was soft, yielding, and pulpy. On percussion the greater portion of the tumour yielded a dull sound, but certain points of it were slightly tympanitic; in fact the whole appearance of the tumour, entirely apart from the history connected with it, at once suggested the idea of an ischiatic hernia. He, therefore, directed the patient to cough, and an impulse was at once conveyed to the tumour, so great, that a moderate cough increased its size by nearly one-half. A similar effect was produced when she assumed the erect position. He next attempted to return the tumour within the pelvic cavity, and although he could not, after the most careful and protracted efforts, return the entire mass of intestine, he was still enabled to reduce the size of the tumour to such an extent as to permit him to feel the edge, of a very considerable indurated opening, immediately overlying the great sacro-sciatic foramen; this, with the contents of the tumour, were at once forcibly protruded on the removal of the hand with which he had attempted its reduction. From the most careful examination of the parts it appeared to him that the complete return of the intestines was prevented, not so much by its size, as in consequence of adhesions which had evidently been contracted between the hernial mass and the structures amongst which it had thus become abnormally placed.

On questioning her as to her general health, he ascertained that the tumour had as yet proved nothing more than an inconvenience, save on one or two occasions when due attention to the state of the bowels had been neglected. On such occasions an unusual pain and fulness was felt in the tumour, which was at once removed by the use of ordinary purgative medicine. The menstrual function was, and still remained, perfectly normal, and no abdominal symptoms were complained of. He explained to her the nature of the affection, and assured her that in its present condition it involved no danger to life, but that from his examination of the case he feared it was impossible to attempt anything calculated to effect a complete and permanent return of the bowel to its natural position. The tumour was, however, a most decided inconvenience to her, preventing



DR. F. C. CROSSLÉ on Ischiatic Hernia.



her from assuming the sitting posture, except with great discomfort to herself; and as it was growing more and more inconvenient every month, from its slow but steady increase in size, he strongly advised her to proceed to Dublin for the purpose of having a proper appliance made for the support of the hernial tumour. He wrote, accordingly, to his friend, Mr. Stokes, and in the month of September last, she was admitted into the Richmond Hospital, where those gentlemen who saw her concurred with him in the diagnosis which he had already formed in the case. While in that institution, Mr. Stokes was kind enough to obtain for him the drawing which he exhibited to the Society, and also a cast of the tumour as it then existed. He also obtained for the woman a truss, the use of which had certainly prevented the tumour from increasing so rapidly in size as it did before its application. To conclude his notice of the case, he had only to say that the patient, notwithstanding the existence of such a formidable looking malady, is still in the enjoyment of excellent health and spirits, that she is in the habit of taking long walks, and that she daily attends to her share of the work in and about a large country farm house.

When they looked over the writings of those who had paid particular attention to the subject of hernia, they found that such cases as that which he had described were very rare, and most of the early recorded cases were of a very unreliable nature. At the time when Lawrence wrote his admirable "Treatise on Ruptures," it did not appear to have ever been recognized in the living subject. True it was, that he mentioned several cases in which such a malady was supposed to have existed, collected from the writings of Papen, Bertrandi, Bose, Cowper, Lassus, and Monroe, but none of those did he regard as a well-established case of ischiatic rupture. In his exhaustive work "On Hernia," Sir A. Cowper recorded one isolated example of the affection, for which he acknowledged himself indebted to Dr. Jones, of Barbadoes, he himself having never seen an instance of it in the living subject. In that case a young man aged twenty-seven had suffered from symptoms which gave rise to the suspicion of strangulated hernia, but no hernia could be found, nor was the neighbourhood of the sciatic foramen examined. Death, however, occurred somewhat suddenly, and on examining the body afterwards, a small portion of the ileon was found to have passed out at the sciatic notch, and to have become strangulated in that position. Mr. Hamilton, of the Richmond Hospital, had favoured him (Dr. Crosslé) with the notes of a most remarkable case, in which a man, aged forty-seven, was affected with double ischiatic hernia. The disease had, at the time of observation, existed for eighteen months without giving rise to any serious consequence. In the *British Medical Journal* of last year (October 5th) a case was recorded in which Dr. Marzolo, of Padua, had recognized the existence of the disease in a woman who first came under his notice in 1857, at the

age of thirty. Ten years previously she had observed a small swelling on the left buttock; it disappeared when she lay down, but reappeared in the erect position, and gradually increased. She had four abortions, and bore one healthy child. When seen, the hernia extended over the buttock as far as the trochanter and forward to the groin. The abdominal wall was retracted. On lying down or sitting, the greater part of the swelling could be returned into the abdomen; defæcation and coition were difficult. Last year the patient again came under observation. Her condition had changed but little, the hernia was now irreducible, and at the lower part there was dulness on percussion and fluctuation. A puncture was made and a large quantity of fluid removed. Diarrhœa set in, and the patient soon died. No *post-mortem* examination could be obtained.—*March 29, 1873.*







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From Photograph.

MR STOKES ON EXCISION OF THE UPPER JAW  
FOR THE REMOVAL OF A FIBRO-SARCOMATOUS TUMOUR  
GROWING FROM THE BASE OF THE SKULL.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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OCTOBER 1, 1873.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XV.—*Records of Operative Surgery.* By WILLIAM STOKES, Professor of Surgery, Royal College of Surgeons, Ireland; Surgeon to Richmond Surgical Hospital; late Lecturer on Theoretical and Operative Surgery, Carmichael School of Medicine; Fellow of the Royal Medico-Chirurgical Society, London; Corresponding Member of the Hufeland Medical Society, Berlin; Member of the Surgical and Pathological Societies of Ireland; Lecturer on Clinical Surgery, &c.

I.—EXCISION OF THE UPPER JAW FOR THE REMOVAL OF A FIBRO-SARCOMATOUS TUMOUR GROWING FROM THE BASE OF THE SKULL.

II.—MEDIAN LITHOTOMY FOR THE EXTRACTION OF AN ENTIRE GUM-ELASTIC CATHETER FROM THE BLADDER.

III.—FOREIGN BODIES IN THE FEMALE URETHRA.

IV.—DELIGATION OF THE RADIAL ARTERY FOR PROFUSE HÆMORRHAGE IN A SLOUGHING WOUND OF THE FOREARM.

V.—ACUPRESSURE IN THE OPERATIONS OF CASTRATION AND AMPUTATION OF THE PENIS.

I PROPOSE, in the first instance, to discuss briefly the particulars of a case in which the operation of excision of the upper jaw was performed. The large size of the tumour necessitating the operation;

the great depth of the situation of its origin at the base of the skull; its course, passing forwards and eroding the osseous structures in front of it, and its anatomical structure, as revealed by the microscope, render it, in my opinion, a case of considerable interest, both in a surgical and pathological point of view.

**I.—EXCISION OF THE UPPER JAW FOR THE REMOVAL OF A FIBRO-SARCOMATOUS TUMOUR GROWING FROM THE BASE OF THE SKULL.**

Michael B., aged fifty-eight, by occupation a labourer, was admitted into the Richmond Surgical Hospital under my care on October 26th, 1872, suffering from an enormous growth on the right side of his face. The history of the case is as follows:—About eighteen years ago some teeth of his right upper jaw were broken in an unsuccessful attempt to extract them, and a short time subsequently a small tumour, about the size of a pigeon's egg, appeared above and behind where the teeth were broken. When squeezed, "matter" used to come from the tumour, and it would partly disappear and return again after some time. It was accompanied by great heat and a shooting pain in the situation where the teeth had been broken. For eighteen years the tumour remained without any perceptible change, when it began to increase rapidly, and continued doing so until it reached the enormous size it had on his admission into hospital. A glance at the lithograph by Mr. Forster, of this city, from photographs taken by Mr. Samuels, of Westmoreland-street, will give an excellent idea of the appearance of the patient before, and subsequent to the operation. On examination, the tumour was found to be uniformly elastic, smooth on the surface, movable, the skin not adherent at any point to the tumour, nor were there any large veins ramifying over it. About the centre of the tumour there was an ulcer, evidently caused by the pressure of the growth on the integument. This ulcer had none of the characters of those so frequently seen in connexion with cancerous growths. The edges of it were smooth and even, the surface of it covered with healthy granulations, and a complete absence of any fœtor from the discharge. The case was also characterized by an absence of the shooting lancinating pains often felt in cancerous growths, and there was also no evidence whatever of any glandular contamination. The patient's general health was excellent, his appetite good, and he slept well.

On examining the interior of the mouth, a great portion of the hard palate was found to be absorbed, but the tumour did not appear to be, to any great extent at least, behind the soft palate. It was quite free and movable, and there was no bulging forwards of it whatever. Having regard, therefore, to the great chronicity of the case, there being a complete absence of glandular contamination or lancinating pains—to the fact that the patient's health was unimpaired—that the ulceration did not present any of the characteristics of carcinoma—and that the integuments remained movable over the tumour—I came to the conclusion that the growth was not cancer, but more probably a sarcoma—a view which subsequent microscopical investigation verified.

Accordingly, I recommended removal of the upper jaw, with the tumour, and in November I performed the operation, assisted by my colleagues, Mr. Adams, Mr. Hamilton, and Professor R. W. Smith. The patient was placed seated in a strong high-backed chair. His legs and arms were firmly secured, and a broad bandage was brought round from the back of the chair across the patient's abdomen, and tightly fastened. An assistant then having steadily fixed the head, I made an incision from the inner angle of the eye downwards and outwards, in front of the anterior edge of the ulceration, as far as the angle of the mouth. Another incision was then made between the same two points, but carried a little behind the posterior edge of the ulceration. The inner flap, or that next the nose, was then dissected carefully back towards the middle line, and continued until I was enabled to separate the two superior maxillary bones by a powerful bone forceps, one blade being passed along the floor of the nose, and the other in the mouth. The posterior flap was then dissected towards the arch of the zygoma, and the junction of the superior maxillary bone and the malar bone also divided by the bone forceps. Portions of the bone which were extensively eroded at each side of the tumour were then removed, and I proceeded to separate the tumour from its lateral, as well as its deep attachments. The tumour passed much deeper and further back than I anticipated, and I found that it took its origin from the body of the sphenoid bone. On the removal of the tumour there was some sharp, indeed alarming, hæmorrhage; which, however, I succeeded in completely arresting by the free application of the actual cautery. There was no recurrence of the hæmorrhage. The cautery I applied not only to check the hæmorrhage, but also to destroy any small portions of the tumour that might have been

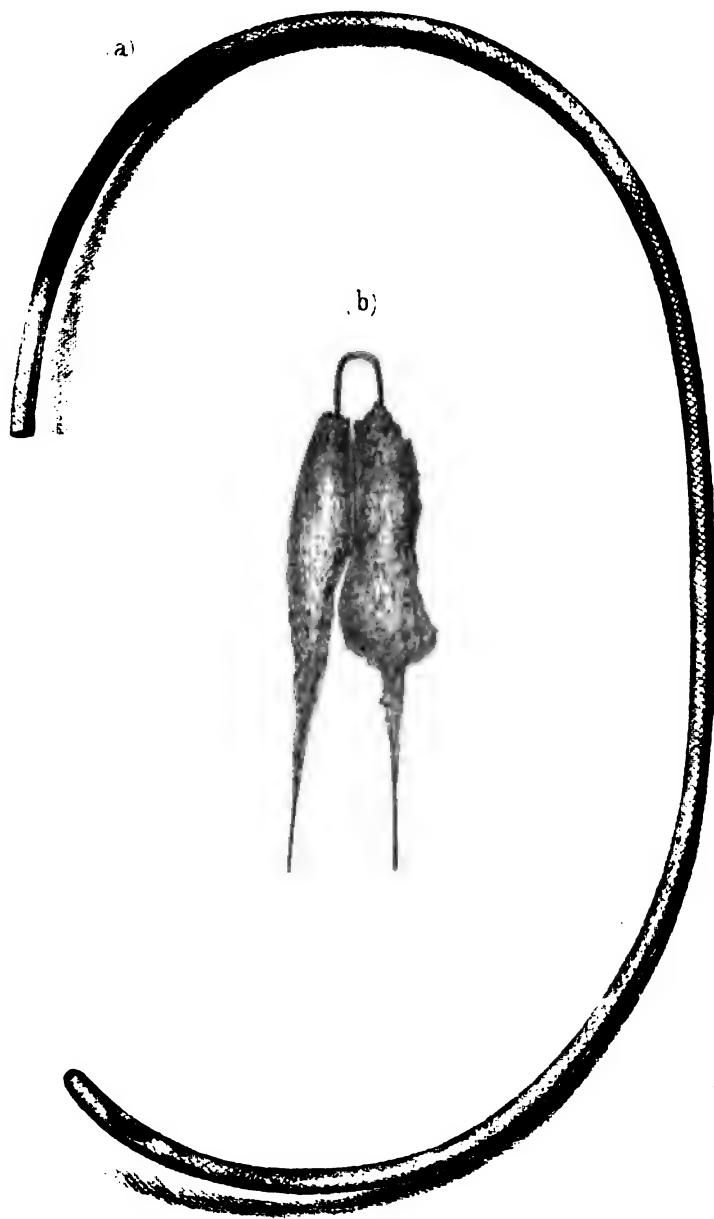
left attached to the osseous structures at the base of the skull at the apex, or deepest portion, of the enormous cavity that was left when the tumour was removed. A pledget of charpie, soaked in solution of perchloride of iron, was then placed in the cavity, and the edges of the wound were then brought together, and fixed by numerous fine entomologist pins and twisted floss silk sutures. On the second day after the operation I removed two of the pins, and on the fifth day three others. On the eighth day the remaining pins were removed, and the wound was found to be satisfactorily united, except at one small point. Nothing whatever untoward occurred during the patient's convalescence.

Being anxious that a careful microscopical investigation should be made to determine the exact anatomical characters of the tumour, I requested my colleague, Dr. Yeo, to examine it for me, and his report will, doubtless, be read with interest. He observes:—"The greater part of the tumour consists of a tough fibrous tissue, containing numerous small spindleform cells; blood-vessels few and small. Here and there throughout this fibrous structure are masses of small, round, finely granular cells, very uniform in size, being about as large as white blood corpuscles. In some of the more superficial parts these two kinds of tissue are so clearly defined, and the fibrous parts arranged in such long pillars, that it reminds one of the structures of a papilloma. From the non-vascularity of the tumour, the uniformity in nature and size of its elements, and the complete absence of anything resembling a so-called cancer cell, I consider that it is not at all a malignant form of growth, and I think it is best classed under the fibro-sarcomata."

## II.—MEDIAN LITHOTOMY.

I deem the following case—which I believe to be a unique one, and for which, in order to remove an *entire* gum elastic catheter that had slipped into the bladder, I performed a modification of the "Marian" operation—worthy of record:—

William G., aged forty, by occupation a labourer, was admitted into the Richmond Surgical Hospital on September 23, 1872, and placed in one of my wards. The patient stated that for many years he had suffered from urethral stricture, and having learned the art of auto-catheterization, was in the habit of frequently passing an instrument, and leaving it in for a considerable period. On the morning of the day of his admission he had done this, but, subsequently becoming intoxicated, he allowed the instrument to

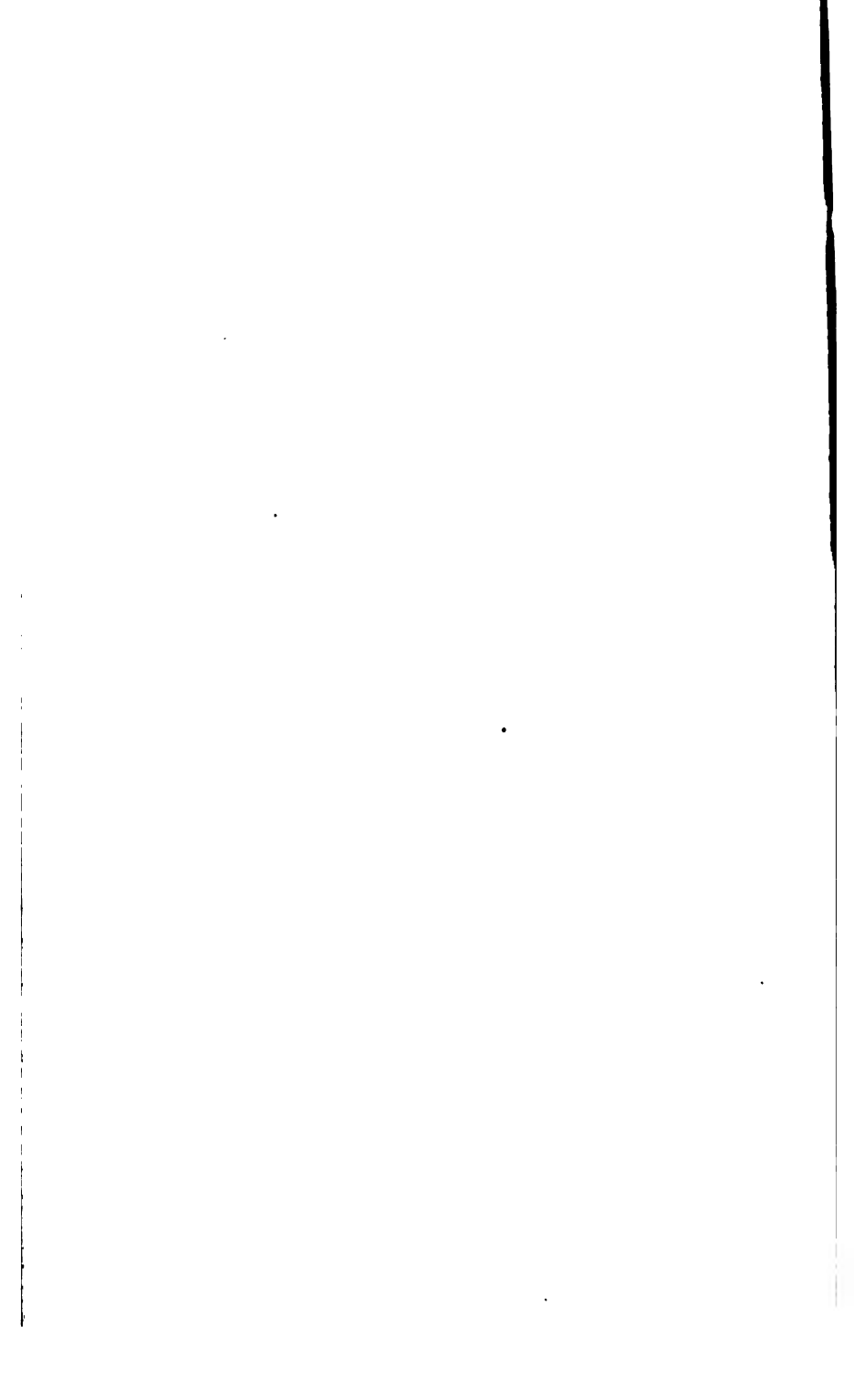


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MR STOKES' RECORDS OF OPERATIVE SURGERY

(a) CATHETER REMOVED FROM THE MALE BLADDER

(b) HAIR PIN REMOVED FROM FEMALE URETHRA



pass up into the bladder. Some hours subsequently, on coming to his senses, he missed the instrument, and, fearing that it had passed into the bladder, he came to the Richmond Hospital in a state of considerable excitement and alarm. He was first examined by Mr. Walker, the senior resident pupil, who satisfied himself as to the presence of a foreign body, which he stated he felt in the perinæum, immediately behind the scrotum. However, considerable difficulty was experienced in determining this, owing to the great amount of induration and thickening of the perinæum, a condition resulting from the formation of numerous abscesses, followed by urinary fistulæ, which the patient had for many years suffered from. These latter had quite closed at the period of his admission into hospital, and as the patient was not suffering from the presence of the catheter in the bladder and urethra, and there being no evidence of any retention of urine, nothing was done until the following morning, when I saw the patient for the first time. Before making any attempt to determine the existence of the foreign body—about which the patient raised a doubt, saying that he was not sure that the catheter might not have slipped out during the night “without his knowing it”—I learned from Mr. Walker, who had previously treated the patient, that the stricture was a double one, and that numerous false passages existed, produced probably by the patient's attempts at auto-catheterization. The existence, therefore, of these false passages, the strictures, and the great thickening and induration of the perinæum, resulting from the numerous abscesses and fistulæ that had previously existed there, made the case a very complicated one. On the first examination I failed to pass a metallic sound, owing to the strictured condition of the urethra, but after several attempts I succeeded in passing an ordinary No. 3 elastic catheter, and I distinctly felt, apparently at the neck of the bladder, the point of the catheter rubbing against a foreign body. My colleague, Mr. Adams, who on this occasion saw the patient along with me, also satisfied himself of its existence. The No. 3 catheter was then left in. The following day I removed the instrument I had introduced, and attempted to pass a small lithotrite, in the hope of seizing the instrument that had slipped in, and removing it by the urethra. Owing, however, to the existence of the strictures, the lithotrite could not be passed. A consultation was then held, at which my friends, Mr. Porter and Mr. Tufnell, were present, and it was determined to endeavour to make room for the lithotrite to pass into the bladder, by forcibly enlarging the



narrowed urethra with Holt's dilator. This was done, but, notwithstanding, all our efforts to pass the lithotrite proved unavailing. I then determined to remove the foreign body. Accordingly, at 4, p.m., in the afternoon of the 27th September, I proceeded to operate, and, my colleagues being unavoidably absent, was ably assisted by my friend, Mr. Porter. Although the forcible dilatation of the strictures did not suffice to enable me to pass a lithotrite, it did prove sufficient to allow of the introduction of a lithotomy staff grooved along its convexity. The foreign body was then distinctly felt, and the patient being put into the lithotomy position, I passed the index finger of my left hand into the rectum, and felt for the apex of the prostate. I then introduced the point of a straight bistoury, with its back directed towards the rectum, half an inch in front of the anus, and made an incision accurately in the middle line, cutting from below upwards. I did not push the knife straight forwards, according to the direction of Mr. Allarton, but divided the tissues cautiously down to the groove in the staff, cutting always from below upwards. There was great depth in the perinæum, and the tissues were matted together, thickened and much indurated, and this condition of parts made the operation a procedure of no small difficulty. At length the groove in the staff was reached, and an incision made into it. Mr. Porter then handed me the long ball-pointed probe, which I passed along the groove in the staff into the bladder. The staff was then withdrawn, and I passed my finger along the probe, and eventually reached the bladder. A long-bladed forceps was now introduced into the bladder, and the foreign body, an entire catheter with a wooden plug in it, which the patient had placed at the orifice, removed. It would be tedious, and is unnecessary, to record the daily progress of the case. The perinæal wound closed very slowly, but in the course of a week the patient was able to pass water freely by the urethra. At present the patient's general health is excellent, but as there is a decided tendency for the stricture to close, a catheter has occasionally to be passed. The perinæal opening never has entirely closed, but as it is steadily though slowly diminishing, it doubtless will do so, and that before long.

Although numerous instances are on record where portions of catheters that have broken, as well as other foreign bodies, have been removed by operation, I am not aware that any instance in which an *entire* catheter, removed from either the male or female bladder, has been recorded. Believing the foregoing case to be

probably a unique one, I wrote to Sir H. Thompson, whose experience in lithotomy cases has been so vast; and his reply, an extract from which I venture to quote, will doubtless be read with much interest. He observes:—"It is curious that I have never encountered a catheter to remove. I have always made up my mind to remove it by a lithotrite if it did happen, if possible. I have removed a hair-pin easily by that means, which is a much more awkward foreign body. I have removed a part of a stick of sealing-wax, and, like you, by the median operation. In your case, of course, the narrowing of the urethra would make the lithotrite impossible. For calculi I have, after trying all kinds of incisions, come to the lateral by choice, and against early prejudice too."

The chief points of interest connected with the foregoing case are:—First, the unusual nature of the foreign body that had to be removed. Secondly, the extreme difficulties that had to be overcome in the operation, owing to the singularly complicated case I had to deal with—a condition arising from the narrowing of the urethra in two situations, the tortuosity of the canal, the numerous false passages, and the great induration, thickening, and matting of all the soft tissues in the perineum; and, thirdly, it shows that the vermicular action in the urethra is, contrary to the commonly-received opinion, towards, and not from, the bladder.

### III.—FOREIGN BODIES IN THE FEMALE URETHRA.

During the past four years there have been, by a singular coincidence, four cases in my hands of foreign bodies in the female urethra, these being, in all the cases, hair-pins. Their extraction, when the curved end of the hair-pin is first seen or felt by the surgeon, can generally be accomplished with facility; but when, as is usually the case, one or both points of the hair-pin are first met with, the reverse is the case. The extraction is then accompanied with very great difficulty, especially when one of the points of the hair-pin has penetrated the mucous membrane of the canal, and passed deeply into the surrounding tissues. When this occurs, it is hard to lay down any precise rules as to the method the surgeon should adopt to extract them; but, generally, I have found the best plan to adopt is to lay hold of any visible portion of the hair-pin with a long-handled forceps, and to force it backwards towards the bladder until one or both points of the foreign body become visible. When these appear, they should be seized by an assistant with other forceps, and then extracted. But when, as

sometimes happens, the hair-pin becomes much bent and altered from its original form, this manœuvre is not possible, and it must then be left to the discretion of the surgeon to adopt whatever plan his own ingenuity may suggest.

Of the cases above alluded to, the most remarkable was one<sup>a</sup> that was under observation in June, 1869. The chief peculiarities of the case arose from the length of time the foreign body must have been lodged in the urethra or bladder, and the enormous deposit that was found upon it. A good idea of its appearance may be had by reference to the accompanying lithograph, which gives a faithful representation of it. In this case, my belief is that the pin was originally inserted with the curved end towards the bladder, that it passed up into that viscus, and remained there sufficiently long for it to become so extensively encrusted as it was, and that eventually it made its way out with the curved end foremost, until, at the orifice of the urethra, it became impacted and caused retention of urine.

*[From notes taken by Mr. A. Vesey.]*

Mary H., aged twenty-eight, by occupation a servant, was admitted into the Richmond Hospital on June 8th, 1869, suffering from retention of urine and great pain in the region of the bladder and vagina. The retention, she stated, had lasted for a considerable time. On examination, the bladder was found distended, and great pain was experienced when the least pressure was made over it. The parts about the orifice of the urethra were found swollen, and protruding slightly through it, the curved end of a hair-pin. On being asked how it got there, she said she did not know. The patient was then laid on a table, the legs drawn up and separated, the forefinger and thumb of the left hand placed at each side of the urethra, so as to prevent laceration during the extraction. The head of the pin was then passed with a forceps, and gradual traction made, but it was found firmly fixed, owing to the large amount of incrustation surrounding the foreign body. It was eventually, however, extracted without any tearing of the urethra. A large amount of urine was then drawn off. A few days subsequently the patient left the hospital and returned home.

<sup>a</sup> The pin was, in this case, in my absence, removed by the clinical clerk.

IV.—DEGLIGATION OF THE RADIAL ARTERY FOR PROFUSE  
HÆMORRHAGE IN A SLOUGHING WOUND OF THE FOREARM.

[*From notes taken by Mr. A. Jolly.*]

There are few cases that the operating surgeon is occasionally called upon to treat that present features of greater difficulty in their management than those similar to the one about to be recorded, in which there was profuse hæmorrhage from a comparatively large vessel among tissues in a condition of hæmorrhagic infiltration, and sloughing. It is not quite clear why this should be so, but that the difficulties are often, indeed generally, extreme in securing a vessel thus situated, is an undoubted fact—a statement which I feel confident will be endorsed by all operating surgeons of experience.

William Kane, aged thirty-five, by occupation a carman, was admitted into the Richmond Surgical Hospital, under my care, on the 20th January, 1872, suffering from a wound in front of the lower third of the forearm, which he had received about half an hour previous to his arrival at the hospital. The wound was the result of a blow inflicted by his wife with a broken plate, he being at the time under the influence of alcohol. Immediately after the wound was inflicted, smart bleeding was observed coming from it; attempts were then made to stop it by the application of cold compresses, but this failed to arrest the hæmorrhage. The patient then attempted to walk to the hospital, but while on his way he became weak, and fainted in the street. Some passers-by, seeing him in this condition, brought him, on his partly recovering, to the hospital. On examination he was found to be very weak, and inclined to faint. He was incapable of giving a clear description as to how the wound was inflicted. It was about an inch in length; situated on the left radial artery in its lower third. The hæmorrhage having ceased, the edges of the wound were then brought together by adhesive plaister, and a compress and bandage were firmly applied. The patient was then urged strongly to remain in hospital, in consequence of the great probabilities of the recurrence of the hæmorrhage, but he refused positively to do so, and returned home. On January 24th, four days after the accident, the hæmorrhage returned. He was then again brought to hospital, and the hæmorrhage was on that occasion arrested by compression. On January 26th, this method of arresting hæmorrhage not being

found any longer effectual, there having been a recurrence of the bleeding, I determined to deligate the wounded vessel at the proximal extremity, and, if necessary, also at the distal. I accordingly, performed the operation, and, as is nearly always the case under such circumstances, I experienced the greatest difficulty in securing the vessel, especially at its distal end, owing, doubtless, to retraction of the vessel, hæmorrhagic infiltration, suppuration, and sloughing of the wound. It is needless to give a daily record of the progress of the case to convalescence. I may mention, however, that two fresh abscess formations supervened—one in the upper part of the forearm, which subsequently communicated with the wound, and another in the middle finger, which had to be freely opened. Another much more serious complication during the bleeding was the occurrence of a severe attack of erysipelas of the hand, forearm, and arm, which was accompanied by a great deal of pain and constitutional disturbance.

On March 6th there was a manifest improvement in the condition of the patient. The wound had assumed a much healthier appearance, and there was a marked subsidence of the erysipelas; and a week after the last date mentioned, the patient was convalescent, and shortly after returned home perfectly well.

#### V.—ACUPRESSURE IN THE OPERATIONS OF CASTRATION AND AMPUTATION OF THE PENIS.

Although acupressure, as a means of arresting hæmorrhage, is not held in such repute amongst many operating surgeons as it was during the later years of Sir J. Y. Simpson's life, there are, in my opinion, some surgical operations in which its advantages are superior to any of the other methods of arresting hæmorrhage that the surgeon makes use of. The operations to which I think it is specially applicable are castration and amputation of the penis; in the latter operation its use being specially indicated in cases where the disease necessitating the operation extends very high up, and close to the pubes. In such cases, as well as in those in which a high division of the cord is indicated in the operation of excision of the testis, the difficulties the surgeon has to contend with in arresting hæmorrhage, in consequence of retraction of the bleeding vessels, are at times extreme, and the operation then becomes a source of grave anxiety to the surgeon, and is fraught with much peril to the patient. The method, which may be termed acupressure *en masse*, was not described, either by the late Sir J. Y. Simpson, or

by Professor Pirrie in his interesting memoir on Acupressure, nor is it original with me, as I saw it practised some years ago by my friends, Mr. Porter and Professor Macnamara, in the Meath Hospital, when I was officially connected with that institution. The method is a modification of the third method of acupressure, as described by Professor Pirrie, the difference being that, instead of one bleeding vessel included between the pin and the wire, there are several, together with, necessarily, the intervening tissues. The procedure is unquestionably less painful than ligature *en masse*; less tedious than, and, I believe, equally efficacious as, the deligation of each vessel separately. It is more secure than the method of charring by a red-hot iron the cut surface of the cord, and, in my experience, much more so than torsion of the vessels, and it has an advantage that none of the others possess, in addition to the rapidity and facility with which it can be applied, and that is, that it effectually prevents the possibility of the recurrence of the unfortunate accident of retraction of the cord into the abdomen, before the hæmorrhage has been effectually arrested. I have employed this method of acupressure in four, out of six, cases of castration, and in three, out of seven, cases of amputation of the penis. In these three cases, owing to the large amount of disease present, the amputations had to be performed close to the pubes. In all these cases the results were most satisfactory.

The following cases prove how effective this method of acupressure is in arresting hæmorrhage during the operation of excision of the testis. In some of the cases there was no hæmorrhage of any consequence whatever, either during, or subsequent to, the operation.

CASE I.—*Enormous Cysto-sarcocoele—Excision of the Testis—Recovery.*

Patrick C., aged twenty-four, by occupation a labourer, was admitted into the Richmond Surgical Hospital, under my care, on October 23rd, 1870. He stated that up to thirteen months previous to his admission into hospital, there was no sign of any enlargement of the testis, and that his health generally was excellent. He subsequently, however, admitted that about four years previously he had a chancre, which was followed by secondary symptoms. About three years after this he noticed the left testicle becoming larger, and he occasionally suffered much from darting stinging pains in it. The tumour went on increasing in size until it reached the

enormous dimensions it had on his admission. It was somewhat pyriform in shape, smooth on the surface. The integuments were dark in colour, and large veins ramified over the surface, more particularly at its posterior aspect. The tumour was of great weight, and there was considerable enlargement of the glands on the left side of the groin. Having regard to the history of the case, I recommended, in the first instance, an anti-syphilitic treatment; but the tumour not being in the slightest degree influenced by either mercury or iodide of potassium, and the patient suffering acutely from the great pain and weight of the tumour, I determined to remove it; and the patient willingly acceding, I performed the operation. I commenced by grasping the scrotum in my left hand, making the integuments over it tense, and then made a long incision from the cord down to the lower part of the scrotum. I then rapidly detached the tumour from its surrounding integuments, and then, before dividing the cord, I passed an acupressure pin through it, having about two-thirds of its thickness in front of the pin, and twisted a loop of strong wire over it. The cord was then divided, and no hæmorrhage whatever followed. As the vessels of the cord were so much enlarged as they were found to be, I did not venture to remove the pin until the third day after the operation. I then did so, and there was no recurrence of hæmorrhage. The wound healed with rapidity. I saw the patient a year and a-half after the operation, and he was then in perfect health.

CASE II.—*Lipoma Testis—Excision of the Testis—Recovery.*

[From notes taken by Mr. Otho Galgey].

N. M., aged twenty-seven, formerly in a cavalry regiment, was admitted into the Richmond Surgical Hospital, under my care, on March 20th, 1871. The patient stated that in August, 1868, he injured his right testicle by falling forwards on the pommel of his saddle while out exercising his horse, and that the organ swelled immediately after the injury. For nearly eighteen months subsequently he was under treatment. Among other remedies mercury was tried, but with no effect. About six months previous to his admission he was considered well enough to return to his military duties, but the frequent horse exercise soon aggravated his symptoms, in consequence of which he was discharged from the army. About a fortnight before his admission, the integuments became thin in one situation, and at last gave way, giving exit to a large amount of matter. A small fungous mass protruded through

the aperture formed by the abscess, which rapidly increased in size until it reached the large dimensions it had on his admission into hospital.

On examination, the integuments of the scrotum were found to be greatly inflamed, and a large fungoid mass, about the size of a crown-piece, protruded through the surface. The protruding mass was of a pale yellowish colour, and irregular on the surface. The testicle was greatly enlarged and hard, but not painful on pressure. The cord could be distinctly felt. The inguinal glands were slightly enlarged, but there was no constitutional disturbance, and the patient complained of no uneasiness of any kind, save from the inconvenient size of the tumour. On March 29th I removed the organ, and, as in the previous case, guarded against any subsequent hæmorrhage by the application of the method of acupressure I have already alluded to. The operation may be said to have been bloodless. Some hours after the operation there was in this case some slight hæmorrhage, which, however, Mr. Galgey arrested by tightening the wire over the pin. This, doubtless, arose from the wire not having been as strong as that which I generally employ for this purpose, and, possibly, from its not having been applied in the first instance with sufficient tightness. The wound healed rapidly, and the patient made an excellent recovery.

The following case occurred in my practice, in the Meath Hospital, and was the first in which I adopted this method of arresting hæmorrhage from the cord, in the operation of castration.

*CASE III.—Chronic Hæmatocele of Six Years Duration—Difficulty of Diagnosis—Castration—Arrest of Hæmorrhage by Acupressure en masse.*

John C., aged sixty-seven, was admitted into the Meath Hospital, under my care, in October, 1867, suffering from a large scrotal tumour occupying the left side. The history the patient gave of his case was as follows:—About six years ago he observed a considerable enlargement of the left testicle, which came on without any appreciable cause, and up to a few days previous to his admission it was unattended with any considerable distress. One day, however, early in the month of October, while engaged in the laborious occupation of packing hay on a cart, he felt a sudden and violent pain in the tumour, and this was followed two or three days afterwards by a great increase in its size. He accordingly came up to town, and was at once admitted into hospital. The tumour was

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very large, oval in form, of very great weight, and firm in its consistence. It weighed very nearly four pounds, and was attended with very great pain. The anterior surface of the tumour was smooth, but posteriorly there was considerable irregularity, and at the inferior portion there was a point at which we discovered distinct fluctuation. At this point I made a puncture with a fine trocar, and gave exit to about half a pint of a clear sero-sanguineous fluid, not like that of an ordinary chronic hæmatocele, which is usually not transparent and of a brownish chocolate colour, but like what, perhaps, may be best compared to the juice of a ripe cherry. This operation was not attended with any very great diminution in the size of the tumour, nor was a second similar operation, which was performed some three or four days after the first. From this circumstance, therefore, from the great weight, size, and hardness of the tumour, from the marked enlargement of the veins which ramified over its surface, both anteriorly and posteriorly, from its form and irregularity, from the pain in the tumour, and great thickness in the cord, I was led to modify the opinion I originally held, which was that it was a simple hæmatocele, and to suspect at all events that the case was complicated with disease in the testicle. The diagnosis in these cases, especially when they are very chronic, and the tunica vaginalis and its coverings have become very much thickened, is attended with great difficulty—"in some instances," as Mr. Curling observes, "it cannot be satisfactorily made out by the nicest manipulation of the most experienced hands." It was, however, obvious, that whatever might be the precise nature of the tumour, there was but one thing to do in order to relieve the patient permanently from the distress occasioned by it, and that was its entire removal, and the operation was accordingly performed on the 6th of last November. The concluding steps of the operation, the division namely of the cord, and the securing of its vessels, were accomplished satisfactorily. Acupressure *en masse* succeeded admirably in completely arresting the hæmorrhage. In truth, in no case in which I have practised acupressure, have its good effects been more apparent than in the one at present under consideration. The morning after the operation the needle was removed, and there was no trace whatever of any secondary hæmorrhage. A section of the tumour showed that the opinion originally formed was the correct one. The tunica vaginalis was found to be much enlarged, in some places being five or six lines in thickness. It was of a yellowish white colour, and

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extremely firm and tough. The testicle, which was much atrophied from the long-continued pressure to which it had been subjected, but not presenting any other morbid appearance, was found, as usual, at the posterior portion of the tumour. The coagula, which resembled much the contents of an old aneurismal sac, being converted into a solid fibrinous substance of a yellowish fawn colour, constituted the principal contents of the tumour. Numerous trabeculæ, formed of coagulable lymph, also traversed the interior of the cyst, giving it the characteristic honey-combed appearance, so often met with in chronic hæmatoceles. The remaining portion of the thickened sac of the tunica vaginalis was occupied by an adventitious gelatinous deposit, which was quite transparent and of a dark-red colour, and this occupied, for the most part, the numerous partitions formed by the trabeculæ or bands of coagulable lymph.

During the convalescence of the patient, nothing untoward occurred. The wound healed with greater rapidity than I at all anticipated, and the patient was able to leave hospital within a fortnight after the operation in good health and spirits.

The fourth and last case in which I adopted this method of acupressure, in the operation of castration, was one of advanced tubercular syphilitic hydro-sarcocele, in a young man, aged twenty-five, who was under observation and operated on in the Richmond Hospital, in November, 1871. The clinical history of the case, however, I am unfortunately unable to give, as the notes of it have accidentally been mislaid. The result of the case, however, was excellent.

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ART. XVI.—*Note on the Treatment of Chronic Cystitis.* By H. S. PURDON, M.D.; Physician to the General and Skin Hospitals at Belfast.

THE following note of a case of chronic cystitis, occurring in a female, may not be uninteresting:—

Mrs. M——, aged about forty, a healthy-looking country woman, residing in the County Down, was admitted into the Belfast General Hospital, under my care, in February last, suffering from chronic cystitis. She is the mother of several children, and attributed her present disease to exposure to cold after last confinement

There was constant desire to make water, and pain over the region of the bladder. The former much worse at night; indeed, she was up nearly every hour, at least, to urinate, and her health was beginning to suffer. Her urine was scanty, ammoniacal, contained a little mucus, and frequently, when the last few drops were being voided, some blood appeared. No tenesmus; bowels regular; appetite pretty good; no thirst. My colleague, Dr. Murney, kindly sounded the bladder for stone; the result was negative. The usual routine treatment was tried in her case, such as uva ursi, pareira brava, buchu, &c. Iodoform vaginal suppositories gave temporary relief, as did also washing the bladder with tepid water and tincture of opium; after some time we tried dilute nitric acid and water, then a mixture containing copaiba; and, lastly, prussic acid—about eight drops to the ounce of water—was tried. These remedies all gave slight relief, but only temporary, and soon lost their effect. About this time, April, I saw a notice of a paper by Dr. Clemens, of Frankfort, on the Treatment of Chronic Diseases of the Bladder by the Injection of Tepid Normal Urine, and I determined to try this method (after taking my then house pupil, Mr. L., into confidence, and who supplied the necessary normal urine). The urine was injected into the bladder—after being first washed out—night and morning, a few minutes after being made, and whilst quite warm, with the most beneficial results—my patient being discharged, seemingly cured, in some three weeks. She was to return and report, but as she has never done so, I take it for granted that she has remained well. No one in the ward knew of the treatment, otherwise they would have rebelled against it, especially my patient. Dr. Clemens offers the following remarks on the injection of the bladder with normal urine, and which may be interesting to reproduce. His paper first appeared in the *Deutsche Klinik*, No. 7. He says that:—"About four years since, in a very bad case of disease of the bladder, in which this organ had been for months in contact only with decomposed and stinking urine, the idea occurred that advantage might accrue from introducing into the bladder urine with its normal proportion of uric acid. The experiment succeeded so well in this and some other cases that I became convinced that the urine in question formed a better material than the most esteemed injections. The bladder having been completely emptied by the catheter, from six to eight ounces of luke-warm distilled water was thrown in, and retained for about five minutes. After this had been removed, some tepid

water is again slowly injected and retained for some minutes. A young and healthy individual now passes water into the syringe, which has been previously raised in warm water to a temperature of  $25^{\circ}$  R, and this is then immediately injected into the bladder, and left in for a longer or shorter time. The impression made by this normal blood-warm urine of a young and strong man—the temperature of which is generally higher than that which has issued from the diseased bladder—is sometimes in the highest degree favourable, so that in one case a single injection has been nearly curative.” Whether this plan of treatment will prove successful in every case remains to be proved; however, it was useful in the one recorded. Probably chloral, or what has been called meta-chloral, might be tried instead, for, according to Dr. Dujardin-Baumetz, of Paris, chloral possesses the property of preventing decomposition of the urine; and Dr. Baumetz thinks that in certain diseases of the bladder it may be usefully injected into that viscus.

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ART. XVII.—*Crystallization of Nitrate of Urea from Urine.* By J. W. MOORE, M.D., M.Ch., Dubl., L.K.Q.C.P.I.; Assistant Physician to Cork-street Fever Hospital.

[Read before the Physiological Section of the British Medical Association, at King's College, London, August, 1873.]

AMONG the tests for urea employed in urinary analyses, where a great degree of accuracy is not called for, one especially commends itself from its extreme simplicity, and from the facility with which it can be applied. I allude to the formation of crystals of nitrate of urea on the addition of nitric acid to a small portion of urine. No doubt this test is little more than a qualitative one, and is, therefore, wanting in scientific precision; yet I believe it to be none the less valuable on this account. Indeed, within certain limits, the test may be used so as to afford an approximate indication of the amount of urea present in a given specimen of urine, provided only that the following important factors are determined, namely, the specific gravity of the urine passed within twenty-four hours; the degree of concentration to which the urine must be subjected before crystals of nitrate of urea are obtained; and the temperature of the air at the time of the experiment.

In carrying out a series of experiments, now extending over a period of some two and a half years, I have been much struck by

the frequency with which crystallization of nitrate of urea occurred without artificial concentration of the urine—the more so, as the majority of authors on the subject of urinary analysis speak of this form of crystallization of the nitrate either in a very cursory manner indeed, or as being a phenomenon but rarely observed.

Berzelius<sup>a</sup> says:—"Suivant Prout, l'urine contient parfois tant d'urée que, sans qu'il soit nécessaire de commencer par l'évaporer, elle dépose des cristaux de nitrate d'urée quelques heures après avoir été mêlée avec une grande quantité d'acide nitrique. Ce phénomène a lieu, suivant lui, quand la pesanteur spécifique de l'urine est entre 1,025 et 1,030, pourvu que ce degré de concentration tienne au diabète." Again:—"Dans des expériences que j'ai faites à ce sujet, j'ai trouvé qu'une urine dont la pesanteur spécifique était de 1,030 qui fut évaporée à 80° (Cent.) jusqu' à moitié de son volume primitif, et que je mêlai alors avec un égal volume d'acide nitrique à 1,250, donna, au bout de cinq ou six heures, quelques petits groupes de cristaux."

Heller<sup>b</sup> writes:—"When urea is present in great quantity we may, by adding nitric acid, precipitate it as nitrate of urea (by cooling the test-tube in cold water or snow, and setting it aside, the entire may stiffen with crystals)."

Golding Bird<sup>c</sup> mentions the formation of urea "*in some cases*" where the urine had not been concentrated by previous evaporation. Neubauer and Vogel<sup>d</sup> speak merely of the preparation of nitrate of urea from an (artificially) concentrated solution of urea.

Lionel Beale<sup>e</sup> writes as follows:—"Not unfrequently, especially in cases of acute disease in this country, the urine contains so much urea when passed that it crystallizes upon the addition of nitric acid without previous evaporation. It appears, from the observations of foreign authorities, that such examples are rarely, if ever, met with on the Continent."

Harley, also, evidently regards the crystallization of the nitrate in unconcentrated urine as a very rare occurrence. He says<sup>f</sup>:—"In some cases of epilepsy, Dr. Sieveking found the urine so loaded

<sup>a</sup> *Traité de Chimie*. Vol. vii., p. 436. Traduit par M<sup>e</sup>. Esslinger. Paris: 1833.

<sup>b</sup> Heller's Pathological Chemistry of the Urine. Translated from the Norwegian of Ludvig Dahl. By William D. Moore, M.B. Page 22.

<sup>c</sup> Urinary Deposits. Page 33.

<sup>d</sup> On the Urine. New Syd. Soc. 1863. P. 14.

<sup>e</sup> Kidney Diseases, Urinary Deposits, and Calculus Disorders. By Lionel S. Beale, M.B., F.R.S. Third edition. P. 132.

<sup>f</sup> The Urine and its Derangements. By George Harley, M.D., F.R.S. P. 60.

with urea that the simple addition of nitric acid to the non-concentrated liquid caused an immediate formation of crystals of the nitrate. In one of his cases, in which I estimated the quantity, I found it amount to no less than 50 grammes per thousand."

From the silence of Neubauer and Vogel on the matter, and from the remarks of Heller and Beale, we may conclude that the quantity of urea present in the urine varies with the locality, if not with the nationality. The results of my investigations would tend to show that in Ireland especially the quantity of urea excreted is proportionally large, and I have, therefore, thought that to submit these results in the present paper might not be unacceptable.

Nearly all the specimens I have experimented on were sent to me by patients in the upper and middle classes of society, at the request of their attending physicians, and were unaccompanied, except in a very few instances, by any note as to (1) the total quantity of urine passed in twenty-four hours, or (2) the clinical history of the case. Under these circumstances, I must, therefore, restrict myself in this paper to a review of the different determining causes of ready crystallization of nitrate of urea from urine under the headings—(I.) Nature and density of the acid employed; (II.) Temperature of the air; (III.) Natural concentration of the urine; and (IV.) The influence of morbid states of the urine.

As already mentioned, the observations on which this paper is based, extend over a period of about two and a-half years. They embrace experiments on 280 specimens of urine, having a mean specific gravity of 1019.2, and examined at a mean temperature of 53.7° Fahr. In 103 cases, (or in 36.8 per cent. of the total number) crystals of nitrate of urea were formed on the addition of nitric acid simply, no preliminary steps of any kind having been taken, except in albuminous specimens. In the remaining 177 cases, the urine was first evaporated to a greater or less degree of concentration, and the acid subsequently added. In albuminous specimens the urine was invariably heated slowly to the boiling point and filtered, the removal of the albumen being necessary, as its presence interfered with the process of crystallization. In these cases, of course, the original bulk of the urine was made up by the addition of water to compensate for any loss by evaporation.

*I. Nature and density of the acid employed.*—In all cases, but especially in those where the urine has not been concentrated by evaporation, a strong acid is necessary, and one *which is as free as*

possible from nitrous acid. These characteristics are combined in the "Acidum Nitricum" of the *British Pharmacopœia*, 1867, which is described as "a colourless liquid, having a specific gravity of 1.42." Nitrous acid decomposes the urea, and, consequently, experiments performed with the fuming nitric acid (spec. grav. 1.52) are unsatisfactory and unreliable. Weaker acids than the official preparation are also unsuitable, for they dilute in some measure the solution containing the urea, and so interfere with the crystallization of its nitrate. The most convenient method of performing an experiment is to mix in a watch-glass a small quantity of urine and acid in about equal proportions.

II. *Temperature of the air.*—On every occasion an accurate observation of the height of the thermometer in the room in which I worked, was made at the time of the experiment. For the sake of comparison I have divided the year into two seasons, each of six months duration, *summer* and *winter*; summer extending from April to September, inclusive, and winter from October to March, inclusive.

In *summer*, the mean temperature of the room was  $61.3^{\circ}$ , the experiments amounted to 128, and on 35 occasions, or in 27.4 per cent. of the experiments (at a mean temperature of  $59^{\circ}$ ), nitrate of urea was obtained without artificial concentration of the urine.

In *winter* the mean temperature of the room was  $47.3^{\circ}$ , the total number of experiments was 152, and in 68 instances, or in 44.7 per cent. of the experiments (at a mean temperature of  $46.5^{\circ}$ ), nitrate of urea crystallized out from the unconcentrated urine.

From this it would appear that, *cæteris paribus*, a difference of temperature of about  $12^{\circ}$  Fahr. influences the formation of crystals of nitrate of urea in unconcentrated urine to the amount of 17 per cent. at least.

By a reference to the accompanying tables the same influence of temperature will be recognized so long as the number of experiments in each degree of concentration is sufficiently large to overcome individual exceptions. Thus, looking at Table I., which gives the general results of the whole year, we find that whereas the experiments collectively were performed at a mean temperature of  $53.7^{\circ}$ , the mean temperature at which nitrate of urea crystallized without concentration was  $3^{\circ}$  lower, viz.,  $50.7^{\circ}$ . A mean temperature of  $54^{\circ}$  accompanied the crystallization on concentration to one-half; of  $54.6^{\circ}$ , that on concentration to one-third; and of  $56.6^{\circ}$ , that on con-

centration to one-fourth. In Tables II. and III. the same influence of temperature is perceptible, although in a less striking degree.

In individual cases also, the effect of temperature has clearly been shown. Thus, a specimen having a density 1019, was examined on May 30th, 1871, the temperature of the room being 74°; crystals were obtained on concentration to one-half. During the following night the thermometer fell to 59°, and nitrate of urea then crystallized out without concentration, and that, too, abundantly. Here a range of 15° proved to be an important factor in the determination of the quantity of urea present in this specimen of urine.

TABLE I.—*Results of 280 Experiments on Crystallization of Nitrate of Urea from Urine.*

Degree of Concentration	No. of Cases	Per cent. of Total	Mean Specific Gravity	Mean Temp.
Crystals obtained <i>without</i> concentration,	103	36·8	1024·3	Degrees 50·7
Crystals obtained on concentration to one-half,	71	25·4	1019·2	54·0
"                    "          one-third,	50	17·8	1016·4	54·6
"                    "          one-fourth,	34	12·1	1014·5	56·6
"                    "          one-fifth,	5	1·8	1012·8	54·0
"                    "          one-sixth,	6	2·1	1009·3	53·0
"                    "          one-seventh,	1	0·4	1007·0	70·0
"                    "          one-eighth,	6	2·1	1007·3	66·3
"                    "          one-ninth,	1	0·4	1008·0	64·0
"                    "          one-tenth,	2	0·7	1007·0	59·0
"                    "          one-twelfth,	1	0·4	1009·0	63·0
Total number of cases,	280	100·0	1019·2	53·7
Saccharine specimens included in the above=20.				
			Saccharine Cases	
Crystals obtained <i>without</i> concentration,	.	.	.=4	
Crystals obtained on concentration to one-half,	.	.	.=3	
"                    "          one-third,	.	.	.=7	
"                    "          one-fourth,	.	.	.=6	



III. *Natural concentration of the urine.*—In passing to the consideration of the influence of this factor in determining ready crystallization of nitrate of urea, it is necessary to remark, that the absence of any clinical history in almost all cases has caused some difficulty in arranging the specimens under the headings of "concentration" and of "disease."

Table I. shows that in 103 out of 280 specimens, crystallization occurred without artificial concentration of the urine. In 71 cases the urine was evaporated to *one-half* its original volume; in 50, to *one-third*; in 34, to *one-fourth*; in 5, to *one-fifth*; in 6, to *one-sixth*; in 1, to *one-seventh*; in 6, to *one-eighth*; in 1, to *one-ninth*; in 2, to *one-tenth*; and in 1, to *one-twelfth*, before crystals of nitrate of urea were obtained.

TABLE II.—*Results of 152 Experiments on Crystallization of Nitrate of Urea from Urine, performed in Winter (October to March, inclusive).*

Degree of Concentration	No. of Cases	Per cent. of Total	Mean Specific Gravity	Mean Temp. Degrees
Crystals obtained <i>without concentration</i> ,	68	44.7	1024.8	46.5
Crystals obtained on concentration to one half,	38	25.0	1018.1	47.2
"                    "          one-third,	26	17.1	1017.8	48.9
"                    "          one-fourth,	15	9.9	1012.0	47.6
"                    "          one-fifth,	2	1.3	1010.0	45.0
"                    "          one-sixth,	2	1.3	1012.5	44.0
"                    "          one-tenth,	1	0.7	1008.0	60.0
Total number of cases,	152	100.0	1020.2	47.3
Saccharine cases included in the above=13.				
			Saccharine Cases	
Crystals obtained without concentration,	.	.	.=3	
Crystals obtained on concentration to one-half,	.	.	.=2	
"                    "          one-third,	.	.	.=6	
"                    "          one-fourth,	.	.	.=2	

The average specific gravity of the 280 specimens appears from the same table to have been 1019.2; of the 103 unconcentrated

cases, 1024·3; of 71 concentrated to one-half, 1019·2; of 50 concentrated to one-third, 1016·4; of 34 concentrated to one-fourth, 1014·5; of 5 concentrated to one-fifth, 1012·8; of 6 concentrated to one-sixth, 1009·3; of 6 concentrated to one-eighth, 1007·3; and of 2 concentrated to one-tenth, 1007·0. In addition to this catalogue, three cases deserve mention:—Of these one, having a specific gravity of 1007, required to be concentrated to one-seventh, at a temperature of 70°; another, having a specific gravity of 1008, was concentrated to one-ninth, at a temperature of 64°; and the third, having a specific gravity of 1009, did not yield crystals of nitrate of urea at 63°, until it was evaporated to one-twelfth its original volume.

TABLE III.—*Results of 128 Experiments on Crystallization of Nitrate of Urea from Urine, performed in Summer (April to September, inclusive).*

Degree of Concentration	No. of Cases	Per cent. of Total	Mean Specific Gravity	Mean Temp.
Crystals obtained <i>without</i> concentration,	35	27·4	1023·4	Degrees 59·0
Crystals obtained on concentration to one-half,	33	25·8	1020·4	61·8
"                    "          one-third,	24	18·7	1014·8	60·7
"                    "          one-fourth,	19	14·8	1016·5	63·7
"                    "          one-fifth,	3	2·3	1014·7	61·8
"                    "          one-sixth,	4	3·1	1007·8	57·5
"                    "          one-seventh,	1	0·8	1007·0	70·0
"                    "          one-eighth,	6	4·7	1007·3	66·3
"                    "          one-ninth,	1	0·8	1008·0	64·0
"                    "          one-tenth,	1	0·8	1006·0	58·0
"                    "          one-twelfth,	1	0·8	1009·0	63·0
Total number of cases,	128	100·0	1018·4	61·3
Saccharine cases included in the above = 7.				
				Saccharine Cases
Crystals obtained <i>without</i> concentration,	.	.	.	= 1
Crystals obtained on concentration to one-half,	.	.	.	= 1
"                    "          one-third,	.	.	.	= 1
"                    "          one-fourth,	.	.	.	= 4

The influence of temperature on the density of urine, is well shown in Tables II. and III. Thus the mean *winter* specific gravity was 1020·2 (at 47·3°), while the mean *summer* specific gravity was 1018·4. Again, the mean specific gravity of the unconcentrated specimens was, in winter, 1024·8, in summer, 1023·4, urine of this *lower* density yielding nitrate of urea crystals readily in the warmer season. In the cases concentrated to one-half, however, the mean specific gravity was higher in summer; and, leaving out of consideration saccharine specimens, this rule held good for the greater degrees of concentration. The reason is obvious—namely, that the factor of *temperature* proved more influential than that of *density*, in determining the formation of crystals, the warmth delaying the process even in urine of tolerably high specific gravity in summer.

In the class of non-artificially concentrated specimens, the extreme densities observed were 1045, and 1014. The highest was in a diabetic urine, the quantity of sugar being very large; the lowest was in a sample of urine examined on the 13th of May, 1872, at a temperature of 50°, during the prevalence of a dry and fresh north-easterly wind, the humidity of the air being low, namely, 69 per cent.

With regard to the question of specific gravity, the most disturbing element was the occurrence of sugar in the urine. But this point will be more suitably considered under the fourth and last heading of this paper, to which I shall now pass.

IV. *The influence of morbid states of the urine.*—In the absence of any clinical history, a defect already alluded to, statistics as to the influence of disease in determining spontaneous formation of crystals of nitrate of urea are wanting. But some interesting facts relative to the influence of morbid states of the urine are deduced from a consideration of its physical characters alone. Among 103 cases, in all, of crystallization without previous evaporation, in 14 instances, at least, the *apparent* excess of urea was probably due to simple concentration of the urine, for no morbid appearances—chemical or microscopical—were observed on careful examination. In 49 cases the excess of urea was accompanied by a deposition, more or less copious, of *amorphous urates*, or of *uric acid*. This was, of course, more notably the case in the colder season of the year, when a deposition of amorphous urate becomes very common indeed, and is then by no means necessarily indicative of disease.

In several of these specimens, however, an excess of urohæmatin pointed to some blood waste, or the tinging of the urates with purpurin afforded presumptive evidence of gastric or hepatic disturbance of some kind. In some instances there appeared to exist an exact correlation between the quantities of uric acid and of urea present—the amount of one varied inversely as the amount of the other. Thus, in one of two specimens from the same patient, each having a specific gravity of 1026, urea was obtained as nitrate without concentration, in fifteen minutes, while a tolerably large amount of uric acid was deposited on acidulating a little of the urine with dilute nitric acid; in the second specimen, nitrate of urea crystallized in less than ten minutes, under similar conditions, but very little uric acid was deposited.

Next in order of frequency to uric acid, or the urates of soda and ammonia, *oxalate of lime* was noticed in connexion with an excess of urea. In 34 specimens numerous octahedra of the oxalate were seen on microscopical examination. On twenty-seven occasions the oxalate was associated with a deposit of urates, or of uric acid. In four cases dumb-bell crystals, as well as octahedra, were observed.

The urine was *albuminous* on twelve occasions, once with a deposit of oxalate of lime, four times with a deposit of urates, and four times with the presence of tube-casts.

In eight specimens *earthy phosphate* was in excess, or acicular and stellate crystals of phosphate of lime, were observed, being associated with oxalate of lime on four occasions.

Four specimens were *saccharine*, and in three of these urates or uric acid crystals were freely deposited. The densities of the urine in these cases were as follows:—1028, 1035, 1030, and 1045. I have already mentioned the disturbing influence of the presence of sugar on the relation between high densities and excess of urea. This is well seen in Tables II. and III. Thus in the *summer* months the fall of density with the increasing degree of concentration, which is required to produce crystals of nitrate of urea, is interrupted—"concentration to one-fourth" answering to a higher density (1016.5) than "concentration to one-third," (1014.8). In the former category are included *four* saccharine specimens, having the densities, 1036, 1042, 1033, and 1037, respectively, while only *one* saccharine specimen required concentration to one-third, its specific gravity being 1032. As a matter of fact, if we except the saccharine cases, the mean specific gravity of the urine concentrated to one-fourth would be as low as 1011.

In *winter* we notice a similar anomaly in connexion with the degree of concentration to one-third. The specimens so concentrated have a mean density 1017·8, nearly as high as those concentrated to only one-half, namely, 1018·1. But six saccharine cases are included in the former, against two in the latter category. The specific gravities of the six cases are 1030, 1026, 1033, 1017, 1027, and 1042, respectively. If we except these, the mean density of the remaining twenty specimens, concentrated to one-third, falls to 1014·4.

The foregoing considerations should, I believe, justify us in concluding that in Ireland crystals of nitrate of urea may, as a rule, be obtained without evaporation of the urine, where the following conditions are fulfilled:—The density of the urine should be about 1025; the temperature of the air should be moderate, about 50° Fahr.; the urine should be non-saccharine, and, if albumen be present, it should be removed by heat and filtration; lastly, the acid employed in the experiment should be of sufficient strength, pure, and added in proper quantity, namely, in almost equal volume to the portion of urine experimented upon.

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ART. XVIII.—*Interesting Case of Aphasia.* By JAMES MARTIN, L.K.Q.C.P.I., F.R.C.S.I., &c., Portlaw.

ON the 4th of July last I was sent for to see John Neill, aged six years, naturally a bright and intelligent boy. His parents state that about five days ago he began to complain of pain in his head, but played about as usual until yesterday. He clearly localized the seat of pain by placing his hand on the right side of his forehead, when asked where he felt it. Yesterday he went to sleep out of doors for an hour, awakening restless and unable to speak, though making earnest efforts to do so. He was placed in bed, got a dose of castor oil, which acted slightly, and I was sent for. I found him looking anxious, but understanding clearly all that was said to him; he put out his tongue and moved his limbs when desired; the right arm was fidgetty, as if slightly affected with chorea; the pupils natural; tongue furred; temperature 100°; pulse 120; respiration 32; kidneys acting well. When asked where the pain was, he put his hand to the right side of his forehead, and tried to speak, but could only make an inarticulate noise. I ordered the hair to be cut

short, and the head to be sponged with tepid water, as well as the hands, arms and feet. I also gave the following prescriptions:—

R. Pulv. jalapæ C.,	} aa. gr. viii.
Pulv. scammoniaë,	
Pulv. zingiberis,	
Sub-muriatis hydrargyri, gr. vi.	

Divide in partes tres, sumat unam tertiâ quâqua horâ donec responderit alvus.

R. Potassii iodid., ʒi.  
 Potassii bromid, ʒij.  
 Potassæ bicarb., gr. xv.  
 Syrupi, ʒj.  
 Aquæ, ʒij.

Cochleare magnum quartis horis sumendum.

July 5th.—Took two powders, which acted freely, bringing away some large scybalæ and copious fluid discharge. Has spoken some words, and, when desired, attempts to speak, but as yet very imperfectly; temperature 100°; pulse 100; no frontal pain. To continue the mixture, and to get broth and milk freely. July 12th.—His improvement has been steadily progressive, and he is now quite well, but a little weak; speaks freely, and has no pain in the head; looks cheerful and intelligent.

The interesting points in this case seem to be—1stly. The readiness with which the attack gave way to treatment. 2ndly. The seat of the affection being placed in such a marked manner on the right side, apparently in opposition to the views of Broca.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Contributo alla Storia Terapeutica del Calomelano.* A contribution to the Therapeutical History of Calomel. By RANIERI BELLINI, M.D., Professor of Experimental Toxicology in the Royal Institution of Florence. Read before the Royal Medico-Physical Academy of Florence, 23rd February, 1873.

THE instability of some mercurial compounds under the operation of physical agents and influences, not generally known as capable of affecting chemical union, involves considerations of grave importance both to the practice of medicine and to medical jurisprudence. For more than a century past there has, indeed, been accumulating a number of isolated observations, tending to illustrate or to dispel the obscurity of this subject, but they have attracted little attention, certainly far less than they merited, and would, undoubtedly, have received, if their relation to therapeutical and forensic medicine had been perceived and correctly estimated. Professor Bellini, of Florence, confers no slight benefit on practical medicine by the learned essay in which he has reviewed the whole subject, tracing historically the detached observations of his predecessors, adapting them to their places in his scientific view, and showing how they concur with his own in establishing the conclusions at which he has arrived. The object of the essay being the possible change, either partial or complete, of calomel into corrosive sublimate within the living body of either man or of the inferior animals, he subdivides his matter under two heads:—

“(a.) Of the changes undergone by calomel taken into the system by the mouth.

“(b.) Of the changes that may be produced in it when applied externally to either diseased or healthy surfaces, or introduced hypodermically.”

Having stated, as the fact earliest known (A.D. 1763), that a noxious compound resulted from the union of calomel with an

ammoniacal salt, he adverts next to the opinion which was advanced after a few years, that in the presence of salts, which would now be termed alkaline chlorides, calomel was liable to be changed into corrosive sublimate. Many years later this appeared to be confirmed by the experience and authority of Peten Koffer. Later still, Mialhe, having in his experiments ascertained that the quantity of corrosive sublimate produced was not proportionate to that of the calomel employed, but had a direct relation to that of the alkaline chlorides present, and also of the air or gases with which the mixture might be in contact, arrived at the conclusion that calomel owed all its medical virtue to its transformation into corrosive sublimate within the alimentary canal. From this conclusion Professor Bellini dissents, as he also does from that of Bouchardat, according to which the change in the calomel is produced in the small intestines by the agency of alkaline carbonates existing in the enteric juices. Bellini, by experiments which he details, found that calomel was not only altered, as previously observed, by or in the presence of alkaline carbonates, but also by the free acids of the gastric juice, especially by the lactic, and that this was sensibly influenced by the conditions of fasting and repletion. He also found that although a soluble compound of mercury was produced, it yet differed from corrosive sublimate in not coagulating albumen, and not being precipitable by the alkaline carbonates. Analogous results were obtained in experiments on mixtures of calomel with protein and other alimentary substances in circumstances of temperature as nearly as possible similar to those of the living stomach. All these numerous and well-designed experiments appear to have been made with scientific caution and a due appreciation of possible disturbing causes. The changes undergone by calomel applied externally were investigated with equal care, and the results brought into connexion with what has been observed of its effects when used either epidermically or hypodermically.

From all this laborious investigation Professor Bellini deduces twenty-four several conclusions, into which he sums up what he proposes as results established by clinical experience and experiments in the chemical laboratory. Of these we subjoin what appear to be the most practically important:—

“That calomel introduced by the mouth into the fasting subject is, in a very small portion of the stomach, and a greater of the small intestine, changed into a soluble mercurial compound.

“That in the stomach this change is effected by the lactic acid and the



alkaline chlorides, and in the small intestine by the alkaline carbonates of the enteric fluids.

"That calomel introduced into a stomach which is digesting protein aliments is either wholly or almost decomposed within that viscus, and that the results of such decomposition are metallic mercury and a soluble mercurial compound.

"That acid drinks and fruit should be withheld during the use of calomel; but that magnesia, whether calcined or carbonated, administered during a course of calomel, promotes the local action of that mercurial.

"That the use of calomel may be injurious when contemporaneous with that of ammoniacal salts, and also in certain diseased conditions, *e.g.*, in those suffering from ammoniema, uro-ammoniema, cholera, typhus, &c.

"That the use of calomel might cause poisoning when administered contemporaneously with the hydrochloride of ammonium, with the aqua lauro-cerasi, with the alkaline or the metallic iodides and bromides, the alkaline sulphides, and the alkaline hydrobromates and hydriodates.

"That opium and its preparations exercise no decomposing power on calomel, but render its effects less perceptible, not by any chemical action, but by their control of the sensibility.

"That calomel applied externally, whether to a whole or an ulcerated surface, or introduced hypodermically, may be rendered soluble by the alkaline chlorides of the organic fluids with which it is brought into contact.

"That such external application may produce severe local lesions, if there be contemporaneous internal use of the alkaline iodides, bromides, or sulphides, or even of sulphur itself in small and frequent doses.

"And that lastly, clinical observation is in complete harmony with the results of chemical and physiological research."

Professor Bellini is entitled to the credit of discussing this subject in that which is the only way becoming a philosopher and a scholar. He traces his subject carefully through the scattered fragmentary notices of his predecessors, adds his own observations and experiments, and so presents the whole matter in an intelligible form within the limits of a brief essay, the materials of which could readily have been expanded into a volume. The observations made ten or eleven years ago by Dr. Haines, in India, appear, however, not to have been known to him. We, therefore, append some particulars of a case in which death appeared to have been accelerated, if not caused, by a mercurial undergoing decomposition within the system. The subject of the case, an European

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soldier, labouring under some form of remittent fever, was directed to be treated with calomel pills, and draughts containing carbonate of ammonia, according to the subjoined formulæ:—

R. Calomel.

P. Rhœi āā gr. iii.,

Extr. Hyoscyami gr. i.

M. Fiant pilulæ duæ, secundis horis cum haustu sequenti sumendæ.

R. Liq. amm. acetatis,

Mist. camph. āā ʒss.

Ammon. sesquicarb, gr. x.

M.

The second dose was rapidly followed by vomiting and abdominal pain; symptoms of gastric irritation continued until death, which happened four or five days afterwards. Only four doses of the medicines had been taken. In the body, examined soon after death, there were discovered signs of acute inflammation of the gastric mucous membrane, several ulcers in the cardiac extremity of the stomach, and extensive gangrenous ulceration at the back of the pharynx.

Whether should these lesions be attributed to the fever, or to the calomel and ammonia? Did the remedies cause, or only aggravate them? Different opinions may be held as to these questions; but the preponderance of the evidence deducible from the independent, yet accordant, investigations of Haines and Bellini, appears to us to be in favour of that hypothesis by which the morbid changes in the alimentary canal are referred to the remedies rather than to the original disease. It is possible that during the prevalence of malignant cholera its effects may have been confounded with those produced by the noxious mercurial compound which is the subject of Professor Bellini's researches. Both calomel and various preparations of ammonia have, during epidemics of that disease, been recommended as remedies, and have been kept ready for use, almost in contact with each other, or separated insufficiently. Disease might thus be aggravated, and what were really toxical be mistaken for merely morbid symptoms and appearances.

*Researches on the Action and Sounds of the Heart.* By GEORGE PATON, M.D. London: J. & A. Churchill, New Burlington-street. 1873.

IN a paper read before the physiological section of the British Medical Association at Dublin, in 1867, and subsequently published in the *British Medical Journal*, and again in the form of a more elaborate communication to this Journal for August, 1870, Dr. Paton had already given to the profession an exposition of his somewhat peculiar views on the action and sounds of the heart.

The treatise now before us professes to be based upon fresh experiments performed in Canada upon the same species of animals (the turtle) "at the highest temperature of the season." And we may add, that the experiments made and the conclusions arrived at, as announced in this volume, are in no degree, and scarcely in any particular, different from those set forth in the first-mentioned publications. Indeed, it would be scarcely too much to say they are both literal repetitions of those which preceded.

Dr. Paton's writings have, therefore, at least the merit of being uniform in conception, in details, and in the conclusions drawn from the experiments narrated.

The reviewer can, from his own stand-point, appreciate this merit, by which, whilst dealing strict justice to the author, he is spared the task of a lengthy and elaborate review.

We do not for a moment doubt the good faith or the zeal with which Dr. Paton entered upon and carried out the course of experimental research, of which the volume before us professes to give a summary, but we do take leave to question his competency to interpret the results which he obtained.

It is unnecessary to enter upon a discussion in detail of his views, some of which startle by their novelty, whilst one, though no less in disagreement with present doctrine than the others, has, at least, the merit of an illustrious but unacknowledged paternity.

The following summary of the conclusions at which Dr. Paton has arrived will afford an adequate exposition of his teaching, and enable our readers to judge how far his authority in the domain of cardiac physiology is entitled to consideration:—

"The reaction of the aorta and the closure of the sigmoid (aortic) valves are factors in the production of the first sound, therefore a murmur of aortic-valve inadequacy 'affects the termination of the first sound.'

"The basic portion of the ventricle remains contracted during closure of the sigmoid valves, so as to support them.

"The second sound is caused by contraction of the auricles.

"The valve-click element of the first sound is denied.

"The 'sharp and acute' sound, or that which is produced by the contraction of the auricles, is the first sound of the heart, and is associated with the dull and prolonged sound which *follows* it, and not with that which *precedes* it, by belonging to the same cycle of function, *i.e.*, the order of sounds is made to correspond to that of the circulation.

"Reduplication of the first sound is due to a resolution of it into the ventricular and aortic elements."

Desiring, as we do, to applaud and encourage original, and especially original *experimental* research in the domain of physiology, we regret exceedingly that in justice to the great subject which he has undertaken to treat, and to the recent discoveries of his distinguished *collaborateurs* in the same department, especially MM. Chauveau and Bergeon, we can accord to Dr. Paton only the barren praise which is due to an ardent and assiduous worker.

### RECENT WORKS ON DISEASES OF THE EAR.

1. *Traité Théorique et Pratique des Maladies de l'Oreille et des Organes de l'Audition.* Par le DOCTEUR J. P. BONNAFONT, Officier de la Légion d'Honneur, &c., &c. Deuxième édition revue et augmentée. Avec 43 figures intercalées dans le texte. Paris: J. B. Baillière et Fils. 1873. Large 8vo; pp. 700.
2. *Lectures on Diseases and Injuries of the Ear. Delivered at St George's Hospital.* By W. B. DALBY, F.R.C.S., M.B., Cantab.; Aural Surgeon to the Hospital. London: J. & A. Churchill, New Burlington-square. 1873. Pp. 221.

It has been charged against medical writers and authors of the present day, that they are rather prone to ignore the labours and writings of the ancients. This charge cannot be made against M. Bonnafont, in the pages of whose learned treatise, on Diseases of the Ear, the lover of ancient medical literature may luxuriate to his heart's content, and may fill his mind to repletion with the opinions of Ambroise Paré, Morgagni, Fabricius ab Acquapendente, Albucasis, Aëtius, Galen, Valsalva, &c. For this very reason

M. Bonnafont's work will be less appreciated by the practical surgeon than by the bibliographer. As M. Bonnafont himself says in his introductory remarks, our first great object should be to learn to cure the sick, and this object is, we contend, better to be gained in the special branch of aural surgery by a perusal of modern works than by any amount of study bestowed on the fathers of medicine, no matter how much we may admire or appreciate them. Indeed, some portions of M. Bonnafont's treatise tempt us to relegate the whole work to the regions of antiquity. Thus, for instance, in the discussion of the external auditory passage, which occupies 133 pages, 20 pages are devoted to the subject of foreign bodies in the meatus, but not once is there any mention made of the use of the syringe and warm water for their removal, though instruments without end are described and figured, and various manœuvres recommended, some of which appear to us almost childish. This chapter on foreign bodies is not only a century behind the age, but, in a work which purports to be a mirror of the present-day practice, is highly reprehensible.

Since writing the foregoing a sad example of such erroneous teaching as M. Bonnafont is guilty of came under our notice. A little girl was brought to us from a distant part of the country with a foreign body in the ear, which we removed in less than a minute by the use of the syringe, and without the least injury to the parts. She had been previously chloroformed in the country, and various ineffectual attempts had been made to extract the foreign body, which had resulted in considerable injury to the parts.

Amongst other great improvements in aural surgery, M. Bonnafont says he has invented the otoscope, "a precious instrument, which preceded the ophthalmoscope by twenty years, and the laryngoscope by more than thirty," both of which instruments are, he says, constructed on the same principles as his otoscope. He has also, he says, constructed an improved speculum, and modified catheterization of the Eustachian tubes, and given new precepts, which render that operation more fruitful in results and more rational. His otoscope is, no doubt, ingenious, but we imagine is not in use by any practitioner, except himself and possibly some pupil. His speculum is a valvular one, which is more clumsy than, and has no advantages whatever over, those of Wilde or Toynbee, now in use in every aural clinique in the world. Although the author dwells lovingly on his own inventions and improvements, he does not once allude to examination of the ear by means of Von Tröltzsch's reflector—a

method of examination which is so easy and so incomparably above all others that it has been universally adopted. Another of the greatest advances in modern aural surgery consists in the introduction into the Eustachian tubes of air or fluids for diagnostic or therapeutic purposes by Politzer's method, but not one word is said about it in the chapter on the examination of the Eustachian tube. Incidentally it is mentioned further on in the work as inconvenient, because it cannot be applied to one ear only! In this same chapter the author asserts that enlarged tonsils may compress the Eustachian tubes, and cause obliteration of these passages—an assertion that few anatomists will, we believe, coincide with. In the chapter on the removal of polypi, no allusion is made to Sir William Wilde's polypus snare, and this omission seems to us all the more strange when we remember that this instrument is of all the most simple and effectual, and that it is in such universal use. The author directs particular attention to the morbid conditions of the membrana tympani, believing that to them is due a large proportion of the cases of deafness. In this view we cannot concur, neither is it, we believe, borne out by modern investigations.

While we cannot but admire the inventive genius of M. Bonnafont, as amply shown in the many and valuable instruments described in his work, as well as his literary knowledge, we cannot ignore the grave practical demerits of this treatise, which purports to represent the practice of aural surgery of the present day in France and other countries.

In passing to the consideration of Mr. Dalby's modest and essentially practical little work, we pass to a pleasant theme. Its language is colloquial, simple, comprehensible, and devoid of all confusing nomenclature. It is evidently the work of a practical surgeon communicating his experience, as well as that of others, in a brief, but very intelligible manner, and illustrated by short abstracts of cases bearing on the subject under discussion. Hence the work will be a most welcome help to the busy practitioner, who has but little time at his disposal for literary work, as well as a most valuable manual for the student. These lectures appeared in the *Lancet* in 1872, and are now re-published, with some alterations and additions.

In discussing obstruction of the Eustachian tube and catarrh of the tympanum, which so often go hand in hand, and cause more deafness than any other diseases, Mr. Dalby says:—

"In commencing the subject of diseases of the middle ear, if you will recollect that this part of the ear, closed as it is at one end by the tympanic membrane and opening at the other into the pharynx, is lined throughout by mucous membrane which is subject to the same affections in this situation as in any other part of the body (within certain limits), and that here the course of inflammation, the changes attending it, and its products, are no different than when the same morbid action takes place elsewhere, all the obscurity that generally surrounds these diseases will disappear. . . .

"Let us first take an illustration of the simplest kind. The occurrence of an ordinary nasal catarrh, or a sore throat, will sometimes in its course involve the faucial opening of one of the Eustachian tubes. We have seen how small the calibre of the tube soon becomes after it leaves the pharynx. A very moderate degree of swelling of the submucous areolar tissue and an increased secretion from the surface will, you can easily understand, suffice to prevent the free passage of air from the pharynx into the tympanum. In such a case the air in the Eustachian tube and tympanum (not being replenished as usual by a constant supply passing in by the faucial opening of the tube) becomes subject to more or less absorption, the density of the air within the tube is diminished, the pressure of air from without the tympanic membrane remaining the same, the inward curvature of the membrane is increased, the chain of ossicles is rotated somewhat inwards, thus increasing the pressure of the stapes on the fenestra ovalis, and sonorous vibrations, impinging on the tympanic membrane, do not produce the same effect on the labyrinth as heretofore. In other words, there is deafness from obstruction of the Eustachian tube. If the balance of air is restored by suitable means, the normal hearing power instantly returns, and, supposing the inflammation to subside, the patient gets well. To take another illustration of a more severe kind. Suppose inflammatory action in the cavity of the tympanum to have proceeded to the formation of pus. If the purulent matter cannot find an exit through the Eustachian tube into the pharynx (at this time the lining membrane of the tympanum is so swelled that the opening of this tube into the tympanum is closed), it will make for itself an escape by a process of ulceration through the tympanic membrane, and there will be more or less disorganization of the tympanum, according to the length and severity of the attack, before the matter has found its way out. A series of gradations between these two extremes will give a very fair representation of diseases of the middle ear, each form possessing some characteristics of its own, and varying in the effects which it leaves behind.

"The term catarrh is used in speaking of affections of the middle ear—non-purulent or purulent as the increased secretion has retained its mucous character or become pus. More frequently than not, catarrh of

either kind begins at the faucial end of the Eustachian tube, and very often only a short part of the tube is involved. A chronic affection of this portion of the middle ear may remain for months without proceeding any further, in precisely the same way that a bronchitis will at one time be confined to the larger divisions of the bronchi; and as sometimes in a few hours the inflammation may spread to the capillary divisions of the bronchial tubes, and be attended with purulent expectoration, so may pus be secreted from the lining membrane of the tympanum in a few hours, when (as in scarlet fever) inflammation has spread from the throat up the Eustachian tube. Other affections of the middle ear commence in, and are confined throughout their course to, the cavity of the tympanum.

"The illustration I have just made use of, where an adult becomes deaf during a cold, is an example of non-purulent catarrh being confined to the faucial opening of the Eustachian tube, and sometimes the subjects of this will get well in two or three days without any treatment. The return to good hearing is, in such a case, generally sudden and attended with a crack in the ears, the explanation of which is, that as the sides of the tube which were in apposition, become separated, the air rushes into the tympanum, and the membrane, which was before drawn in on account of the unequal pressure from without, resumes its natural curvature as soon as the balance of air on either side is restored. This is the mechanical change which we attempt to bring about and endeavour to render permanent in all treatment of impaired hearing arising from such causes.

"The means which we have at our command to overcome obstructions in the course of the Eustachian tube are in chief part two: viz., Politzer's method, and the catheter. The first of these two was introduced some years ago by Dr. Adam Politzer, of Vienna. It consists in passing a stream of air through the inferior meatus of the nose during the act of swallowing (at this moment the opposed sides of the faucial orifice are drawn apart by the palate muscles), when the air will rush up the tubes into the tympana. . . .

"The permanent effects to be apprehended from obstruction of the Eustachian tube, either at the faucial or tympanic orifice, are always due to neglect. Persons get deaf during a cold, remain so for a few days, and recover without treatment. In future, they or those who have witnessed this state of things very naturally argue that this is the usual course of events. It is not so. Any obstruction that has persisted for many days (this applies chiefly to adults) is liable to remain more or less, or at any rate to make necessary a long course of treatment which would not have been required if attention had in the first instance been given to the case. In other words, a few inflations of the tympanum at the commencement would have placed the patient in the way of recovery. It too often happens that weeks or months are allowed to pass by before



relief is applied for, and it is then found that air passes by Politzer's method very imperfectly into the tympanum. . . .

"Non-purulent catarrh of the tympanum may commence in the manner described when speaking of Eustachian obstruction in adults dependent on a relaxed state of the mucous membrane of the throat, and thus the cavity of the tympanum may become involved by extension of the catarrh in this direction, or the tympanum may become affected independently of the Eustachian tube. In either case, repeated attacks of this kind, if allowed to proceed unchecked, are among the commonest causes of confirmed deafness; this symptom being due principally to accumulations of mucus in the tympanum (fluid in the early stages, and becoming inspissated in the latter), which by their presence interfere with the proper performances of the functions of the ossicles and tympanic membrane, and also with the conduction of sound through the tympanum to the labyrinth."

As a *résumé*, we again quote the author:—

"We have seen that simple Eustachian obstruction which has not involved the tympanum is alike easy of diagnosis and treatment, and that the subjects of this will get well if treated within reasonable time. That when the affection has extended to the whole of the middle ear, so long as it is not of very long standing, recovery may be expected, and that the treatment consists in the main in the air douche regularly applied with Politzer's inflator, or the Eustachian catheter, and astringent solutions injected to the lining membrane throughout the middle ear. That if this unhealthy condition of the middle ear be allowed to exist unchecked for some time, as in the case of some other morbid processes, it may arrive at a state of quiescence, and that certain pathological products, having their seat in the tympanum, result in consequence, which products, having assumed various forms in this situation, will so act as to become impediments to the passage of sound to the labyrinth. That the forms which these products take are most varied; that it is frequently with the greatest difficulty they can be estimated during life, but that upon these forms depend the answer to the question whether the disease is remediable or not? Lastly, that we must at times be content to act on certain general principles in such cases in the confident expectation that in whatever proportion we can soften or remove these results of disease, which are obstructing the passage of sound through the tympanum, so will the hearing power improve."

Eustachian obstruction is very commonly met with in children, and a constant source of deafness.

"In these subjects a vast extent of mucous membrane is in the same

condition—the nares, fauces, and Eustachian tube being affected together. The mucous membrane throughout is thickened and tumid, and secretion from the surface is much more abundant than it should be. The tonsils are generally enlarged, and sometimes to a very considerable extent. Of such children it is hardly necessary to ask what is the matter. The stupid vacant look as they advance with open mouth, and their generally flabby appearance proclaim their disease. They snore loudly in their sleep, and the deafness is generally severe. The tympanic membrane will be seen to be drawn in, but to retain its proper translucency; as a rule there is no tinnitus. It is surprising for what a length of time this state of things will go on with children and yet permit of complete recovery; while, on the other hand, in the case of adults, when the Eustachian tube is obstructed from a relaxed condition of the mucous membrane, the tympanum will generally become involved if they are not attended to soon after the deafness is noticed. The treatment to be adopted for these young patients is to apply astringent solutions locally to the fauces, tonic medicines (preparations of iron and the mineral acids), plenty of fresh air, and exercise, together with the ordinary rational means of improving the health. The tonsils, however much they may be enlarged, cannot operate mechanically by closing the Eustachian tube, but they may interfere with respiration, and, by presenting a large surface of thickened mucous membrane, assist in keeping up the unhealthy condition. These considerations should weigh in deciding whether they should be removed or not. Of all things it is important that the Eustachian tube should be regularly opened; if this is not done all else will be useless. To accomplish this, Politzer's is the best method. Measured by the good it has done, it would be difficult to over-value this proceeding in treating diseases of the middle ear; for before this plan was suggested, a large number of cases, especially children and timid women, on whom catheterisation was not practicable, went unrelieved."

Of blistering and counter-irritation, Mr. Dalby says:—

"You may, perhaps, be surprised that in all I have said on the subject of treatment no mention has been made of blisters as applied over the mastoid process. If I shared the opinion still retained, I believe, by some, that the chief available resources for treating diseases of the ear consisted in the use of the syringe and blisters, I should have hesitated before I criticised unfavourably one of these agents, lest I should haplessly leave you with only one to fall back upon. An exaggerated idea of the potency of blisters behind the ear is not altogether to be wondered at when we remember that it has been a time-honoured practice to advise this application for all acute, chronic, inflammatory, and non-inflammatory affections of the external, middle, and internal ear.

"So common is it now, that it is rare to meet with a patient suffering from disease of the ear of any long standing who has not, at one time or another, been subjected to this favourite, and fortunately harmless remedy.

"In an article on counter-irritation by Dr. Dickinson in the 'St. George's Hospital Reports' for 1868 the empirical manner in which blisters are ordered by practitioners of successive generations is graphically shown. Wholesale blistering behind the ear must be added to the list of examples there recorded where counter-irritation is prescribed in a truly irrational manner. This agent in treating ear affections has long been discarded altogether in Germany, and it is desirable that the example thus set us should either be followed, or that it should be determined in what class of cases blisters are likely to be serviceable.

"If at any time we can discover a class of cases where they unquestionably have a good effect, even though we cannot explain the way in which they act, it were better to prescribe blisters empirically than not at all, but up to the present time I have not been able to satisfy myself that they have in any single case done good. To have our faith shaken in any belief is a distressing process, and in the question before us we must remember that Mr. Toynbee, in his book '*On Diseases of the Ear*,' recommends again and again blistering over the mastoid process and the administration of alteratives, and this with his very large experience. I have some hesitation, therefore, in saying that, from what I have seen, it seems to me highly probable that beyond a disagreeable and somewhat disfiguring sore behind the ear, which serves to remind the patient of the trouble for which they have been applied, they produce no effect on the majority of cases in which they are employed. They may possibly be useful in the extremely uncommon condition of serum in the cavity of the tympanum, and this on the principle that the vesicated surface has a vascular connexion with the cavity to be acted upon. In this way, the withdrawal of serum by means of blisters may be expected to excite the resorption of the effused serum by the blood-vessels."

We have quoted so much on the subject of catarrh, that we find the space at our disposal too small for further quotations. The reader will gather from those adduced, however, the general character of the work, and will be, we hope, induced to peruse the work itself, which reflects credit on the author as well as the eminent publishers.

*Neuralgia, and Kindred Diseases of the Nervous System: their Nature, Causes, and Treatment. Also a Series of Cases, preceded by an Analytical Exposition of them, exemplifying the Principles and Practice of Neuro-Dynamic Medicine.* By JOHN CHAPMAN, M.D., &c. London: Churchill. 1873. Pp. 512.

IN his Preface the author thus states the main objects of his work:—

“(1.) To expound a doctrine explanatory of the nature, genesis, and causes of pain in general.

“(2.) To exemplify the applicability of that doctrine as a means of explanation of the genesis and causes of neuralgia in particular.

“(3.) To prove that neuralgia of that kind which is regarded as a special disease, and which has been distinctively designated ‘immaterial,’ ‘centripetal,’ and ‘true,’ cannot be scientifically differentiated from other kinds of pain, and that it and all other kinds of pain are, in respect to the nature of their proximate cause, essentially identical.

“(4.) To give a series of explanations of the nature of those morbid changes in the nervous system constituting the groundwork and causes of all of those collateral phenomena commonly called ‘complications’ of neuralgia; explanations thoroughly accordant with each other and with the doctrine just mentioned concerning the nature and causes of pain in general.

“(5.) To show that the doctrines in question, concerning pain in general, and neuralgia in particular, as well as the collateral phenomena of neuralgia, suggest a therapeutical principle, by the guidance of which the most successful method of counteracting each and all of those morbid states may be attained.

“(6.) To prove implicitly by the whole body of facts and arguments adduced for the objects already mentioned, that in man, and, indeed, in all animals having a highly differentiated nervous system, the presence of disorder or disease, even in any part of the body other than that of the nervous system itself, is, as a general rule—liable, however, to exceptions perhaps not yet ascertainable—a phenomenon or expression and consequence of the existence of disorder or disease in some part of that system, and that that principle of healing is alone truly rational or scientific which, in order to remove morbid phenomena in any part of the organism, prescribes a method of treatment capable of operating as directly as possible on the nervous centres themselves, and thus of uprooting and removing from any part of them the immediate cause of those phenomena.

"(7.) To exhibit an experimental verification of the pathological, etiological, and therapeutical principles which the work expounds; a verification consisting of 100 accurately reported cases (in each of which pain or sensory disorder was a prominent feature), proving that not only pain, but diseases of various kinds, and located in any part of the bodily periphery, can be most surely and most effectually remedied through the agency of the nervous centres themselves by a modification of their vital activity, and that this modification can be easily and comfortably produced, without the aid of drugs, by the practical application of the doctrines and method which, collectively, I have found it expedient to designate neuro-dynamic medicine."—(Preface, p. vii.)

It will be seen from this extract that the scope of the work before us is much wider than might have been supposed from its title. It is intended to expound a *theory* which will account for, and a *method of treatment* which will cure, not only neuralgia, but all other diseases, whatever their seat, and however different their nature may apparently be.

The following is a summary statement of the author's theory, given in his own words:—

"(1.) That pain, whatever may be its exciting cause, and whatever may be the structure in which it is felt, is, like ordinary sensation, a phenomenon of functional change in the sensory centre into which the affected nerve is rooted.

"(2.) That the nature of the functional change denoted by ordinary sensation and the nature of that denoted by pain are essentially identical, the difference between the two being only a difference of degree of rapidity or intensity with which the change occurs.

"(3.) That pain, like ordinary sensation, is of various degrees of intensity, and that whereas pain denotes a more rapid functional change in the affected sensory centre than occurs during ordinary sensation, the successively higher degrees of intensity of pain are expressive of successively higher degrees of rapidity of functional change in the functioning sensory centre.

"(4.) That whereas an indispensable condition of those functional changes in the sensory centre which are comprised within what may be termed the ordinary sensory scale is a normal supply of arterial blood, in order to provide for those transformative changes which are at once chemical and nutritive, and which constitute the groundwork and possibility of functional change, so a supply of arterial blood greater than normal is an indispensable condition of those more intense functional changes in the sensory nerve centre comprised within the wide range of

what may be called the neuralgic, or more generally, and perhaps more correctly, the *algic* scale.

“(5.) That pain is not necessarily a morbid phenomenon ; that in its beginnings it is rarely, if ever, so in otherwise thoroughly healthy organisms ; but that if, in such organisms, the operation of its exciting cause be long continued, it will induce in the affected sensory centre a habit of morbidly intense functional activity, so that at length, when that habit is generated, it will persist even after its cause is removed.

“(6.) That a neuralgic habit thus generated may be transmitted hereditarily ; and that, though it may remain latent during a considerable time, it may be suddenly lighted up by some exciting cause, so slight as to escape observation, and thus constitute in the second generation what is sometimes designated spontaneous or idiopathic neuralgia.

“(7.) That the general doctrine expressed in the foregoing propositions in respect to pain is, *mutatis mutandis*, applicable to the several phenomena constituting the complications of neuralgia, which consist generically in disorderly actions of muscles, voluntary and involuntary, of morbidly excessive action of glands, and of disorderly processes of local nutrition.”—(P. 23).

The principles of treatment, or, as the author calls them, of neuro-dynamic medicine, are thus stated :—

“(1.) That the chief function of the sympathetic nervous system consists in regulating the diameters of the blood vessels throughout the body.

“(2.) That when the sympathetic ganglia are in a state of maximum hyperæmia, the nervous effluence from them to the muscular coats of the arteries to which they are severally related stimulates them so excessively as to induce in them a condition of tonic spasm—a spasm so intense as to result in shutting off the blood altogether from a large proportion of the peripheral arteries.

“(3.) That when the sympathetic ganglia are in a state of maximum anæmia the nervous effluence from them to the coats of the arteries to which they are severally related becomes so extremely feeble that a condition resembling paralysis is induced ; the muscular coats of the arteries become, consequently, extremely relaxed, and as the blood flows in the direction of least resistance, the parts supplied by the arteries in question become suffused with blood to an excessive degree.

“(4.) That when the spinal cord is in a state of hyperæmia, cramps of the involuntary muscles surrounding the alimentary tube ; cramps, or even convulsions, of the voluntary muscles ; an excess of glandular activity ; and an excess of sensibility (hyperæsthesia) are likely to ensue.

“(5.) That every gland and glandular follicle in the body is under the

control of one motor nerve (which I call the *positive motor*), emerging from the cerebro-spinal system, and distributed to its secreting cells, in order to regulate its functional activity; and of another motor nerve (which I call the *negative motor*), emerging from the sympathetic system, and distributed to its artery, or arterial twig, in order to regulate its blood supply.

“(6.) That in the same manner as glands are supplied with positive, as well as with negative, motor nerves, so, there is reason to believe, every tissue of the body is thus supplied, and is thus placed and sustained in a state of eclectic affinity for the elements of the blood requisite for its nourishment and functions.

“(7.) That the sympathetic ganglia and the spinal cord can be rendered hyperæmic or anæmic artificially, by means of heat in one case, and cold in the other, applied along the spine.

“(8.) That cold applied along the spine will subdue cramps or excessive tension of both voluntary and involuntary muscles, will lessen sensibility, will lessen secretion, and while increasing within certain limits the general circulation and bodily heat, is capable, by prolonged use, of lessening textural nutrition.

“(9.) That heat applied along the spine will (in some cases) induce cramps of the voluntary and involuntary muscles, will increase sensibility, will increase secretion, and will lessen the general circulation and bodily heat.”—(P. 284).

From these quotations it will be seen that the author believes the essence of all diseases to consist in hyperæmia or anæmia of the nervous centres, and the main object of treatment to consist in the attempt to diminish or increase the quantity of blood in these centres by the application to the parts of the surface nearest to them of cold or heat. Now, leaving aside for the present the question, whether, by the application of ice over the spine, we can diminish the quantity of blood in the cord, an objection to the theory at once strikes us. We think the sharp line drawn between the functions of the spinal cord and those of the sympathetic ganglia is altogether unwarranted by physiology. It is well known that when the spinal cord is injured by accident or in experiments, besides symptoms of paralysis of motion and sensation, those of vaso-motor paralysis are also observed, and that, although the cords and ganglia of the sympathetic are uninjured. It is very doubtful that the sympathetic ganglia can act as centres at all, that is, as originators of so-called nerve force, or even as centres for reflex action. The only instance in which such reflex action occurring in a ganglion was supposed to be proved, was in the celebrated

experiments of Claude Bernard, on the sub-maxillary ganglion, and his deductions from these experiments have lately been called in question by Schiff and other physiologists.

But whatever the function of the ganglia may be, one thing is certain, namely, that the origin of the greater part of the vaso-motor nervous system is in the cerebro-spinal centres. Hence we have the positive and negative motor nerves arising together, and in a particular instance how are we to tell whether it is hyperæmia of the one, or anæmia of the other, with which we have to deal. Suppose a gland secretes too abundantly, is this due to hyperæmia at the root of the positive motor, indicating treatment by cold, or anæmia at the root of the negative motor, indicating treatment by heat. Or pain is felt in some part of the body: is this due to primary hyperæmia of the centre in which the sensitive nerves of the part are implanted, or is this hyperæmia only secondary to anæmia of the part from which the vaso-motor nerves of their centre arise. This uncertainty gives great elasticity to the theory, and we find continually through the work the same phenomena referred at one time to hyperæmia, and at another to anæmia, according as it suits the argument.

One of the chief proofs put forward by the author in support of his theory is that drawn from the results of treatment. He argues that because a certain symptom is relieved by the application of ice to the spine, therefore that symptom must have been caused by hyperæmia of the cord, but there is no attempt to prove that the quantity of blood in the cord is altered by the application of the ice. That it is so altered we think very doubtful. The application of ice to the skin causes only a very temporary contraction of even the superficial vessels. On the removal of the ice-bag after an hour, the skin is generally found red and congested, and it appears to us in the highest degree improbable that a bag of ice placed over the spine could make the vessels of a part so deeply seated as the cord contract, except by reflex action, as occurred in the experiments of Brown-Séquard and Tholozan, in which the vessels of one hand contracted when cold was applied to the other. Such reflex action from the skin to the nervous centres has never been proved, and we should think that the chilling of the surface and contraction of superficial blood-vessels would rather cause a collateral hyperæmia of the internal parts, such as is known to occur during the cold stage of an intermittent fever. Most of our readers will, we think, agree with us when we say that the author pushes his theory to the extreme



limits of what is conceivable, when he purposes to diminish the blood in the spinal cord and to increase that in the sympathetic ganglia, by placing on the back three parallel bags, the central one filled with ice and the two lateral with hot water.

Dr. Chapman devotes a chapter to the examination of Dr. Bland Radcliffe's theory of neuralgia, and another to the examination of Dr. Anstie's. There is much ingenuity displayed in his objections to the views of these authors, which he handles without mercy. He dwells greatly on the purely hypothetical foundation for their arguments; we think, however, there is just as slight a basis of fact for Dr. Chapman's theory as for those of his predecessors, and we fear very much that we are still a long way from any principle which will explain all the phenomena of nervous disease, and point out an easy and certain method of cure.

There are many other points in the physiological side of Dr. Chapman's book to which we would take exception, did space permit—as, for instance, the large part which he makes the nerves play in the nutrition of the body and the secretion of the glands. The whole question of trophic nerves is still one of the darkest in physiology, and many histologists see good reason to doubt the truth of Pflüger's statement that the nerve-fibres terminate in the nuclei of the gland cells. We think, too, that Dr. Chapman assumes as proved the existence of an attraction between the blood and tissues, as a force in keeping up the movement of the blood. This so-called "capillary force" is not recognized by most modern physiologists.

While, however, we feel compelled to differ from our author on matters of theory, we have no wish to throw discredit on the results which he has obtained by his treatment. He gives a very large number of cases treated successfully by the neuro-dynamic method. We think this method of treatment, invented by him, has not had the trial by the profession which it deserves. This was possibly due in great part to the theory with which it was burthened. But we should never refuse to accept a good therapeutical method because we cannot explain its mode of action. Our own experience of the treatment of disease by the local application of heat and cold over the nervous centres is too small to be of any weight one way or the other, but such as it is, it is favourable to the method, and we can certify that the discomfort produced by the application of ice to the back is much less than might have been supposed *à priori*.

*Club-foot: its Causes, Pathology, and Treatment. Being the Jacksonian Prize Essay for 1864.* By WILLIAM ADAMS, F.R.C.S. 8vo., pp. 464. Second Edition. London: J. and A. Churchill.

PRIZE essays seldom sustain their original reputation, and it is not often that they reach a second edition. The work before us, however, bears none of those marks of haste or immaturity which are usually conspicuous in books written up to time, or to suit the views of a limited tribunal. It is scarcely possible to conceive that a treatise on an important subject could be written with more comprehensiveness than Mr. Adams's book on "Club-foot." The history of Tenotomy is now so generally known that we need not advert to the author's opening chapter, more than to direct attention to the honest manner in which he quotes and acknowledges his obligations to his predecessors in the speciality—an honesty which does not in the least detract from the value of his own numerous original observations.

The remarks on the physiological and pathological effects of subcutaneous tenotomy will be found most instructive, as well as the writer's particular views as to the means for obtaining the best results from the operation. It is worth remarking that he lays especial stress on the necessity for keeping the divided ends of the tendon close together for some days, which is done by mechanically retaining the foot in the original deformed condition. This practice, though contrary to the teachings of such authorities as Syme, Miller, and Gross, has not only the author's arguments and success to recommend it, but is also in accordance with the precepts of Delpech, one of the fathers of orthopædic surgery. In the chapter which deals with the relative merits of tenotomy and mechanical extension, Mr. Adams examines both modes with most judicial fairness, and his views are quite in accord with our experience. He acknowledges that many cases can be cured by mechanical means alone, and, doing so, he takes occasion to animadvert most severely on an author who, publishing a treatise with the *ad captandum* title of "Cure of Club-feet without Cutting Tendons," endeavours to prove that in no case is the operation necessary. We would strongly recommend Mr. Adams's observation on this subject to all young practitioners who may have to deal with cases of club-foot, before they subject their patients to the inconvenience, delay, and probable disappointment

of mere mechanical appliances. After devoting two chapters to the causes of the non-congenital and congenital varieties of the deformity, the author takes up each form, describes its external characters, its anatomy, and treatment. Nothing could be more practical or more useful to the practitioner than the details given of the operations and subsequent treatment. The particular structures to be divided, the precise mode of operating, and the changes to be avoided, are treated with a minuteness that leaves nothing to be desired, while the plates and woodcuts with which the volume abounds make the explanation in the text clear to the most limited understanding. To be, perhaps, somewhat hypercritical, we would suggest a little more *anatomical* exactness in the directions as to cutting. Thus, for example, the author, in speaking of dividing the tibialis posticus tendon, directs the knife to be inserted between the bone and tendon, *behind* (?) the latter. This is a small error, but it is repeated, and its correction in the next edition would tend still further towards perfection. It is not possible, in a brief notice, to specify all the deserving portions of the book before us, and we have no hesitation in recommending it to the hospital surgeon who may wish to have his own practice improved or confirmed by one who has made the subject a speciality—as well as to the general practitioner who may have a case in the treatment of which he would desire to be guided by the highest authority.

We do not wish to conclude this review without noticing the very remarkable case reported in the appendix, illustrative of the value of sub-cutaneous tenotomy in the treatment of deformities in the lower animals. Mr. Adams publishes, with an illustration, a letter from Mr. J. Roalfe Cox, M.R.C.V.S., descriptive of a congenital deformity in one of the fore-feet of a colt, depending on shortness of the flexor perforans tendon. The foot was turned so that the animal walked on the front of the hoof. Tenotomy was performed, the foot restored to its position, the horse was trained as a racer, and carried off several important stakes!!

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*A Practical Manual of the Diseases of Children; with a Formulary.*

By EDWARD ELLIS, M.D., Physician to the Victoria Hospital for Sick Children. Second edition. London: J. and A. Churchill. 1873. 8vo, pp. 340.

In the number of this Journal for January, 1872, will be found a review of works on the diseases of children, in which we had

occasion to notice the first edition of Dr. Ellis's manual. In that notice we found fault with two statements of the author—one relative to the normal axillary temperature of children, which was given as varying from 88° F. to 98° F.; and the other bearing on the frequency of intestinal hæmorrhage in the typhoid fever of children. We regret to say that these statements are repeated in the second edition; and we really think that this is a matter of some importance in a book which "is to present concise, yet thoroughly practical descriptions of the principal diseases of children."

Wunderlich, who will be acknowledged by all as *the* authority on clinical thermometry, makes no mention of such an extraordinary range of temperature as that described by Dr. Ellis. In the New Sydenham Society's edition of his work, however, we obtain, in a foot-note on page 97, a clue to the solving of the difficulty; for the translator states that a cold bath, *at the time*, may reduce the temperature to 88° Fahr. Our author might, at least, have qualified his assertion by an allusion to a cold bath and its transitory effects.

The second point we feel bound to criticise is the statement (on page 89, where, by-the-bye, "ileo-cæcal" is spelled "ilio-cæcal") that in typhoid fever hæmorrhage occurs in about 25 per cent. of the cases; perforation in about 13 per cent.

It is difficult to reconcile this with the experience of such a man as Dr. Murchison, who, speaking of *intestinal hæmorrhage* in typhoid fever, remarks:—"In children it appears to be rarer than in adults; out of 232 cases under 15 years of age, observed by Messrs Taupin, Rilliet, and Barthez, it occurred only once."\*

We have thought it our duty—an unpleasant one, indeed—to again draw attention to these flaws in what is really a very good little book—rather superficial, no doubt, but still instructive and useful, especially to young practitioners. The introductory chapter on the important subjects of the management and dietary of children has been carefully re-written and much enlarged, and the sixty additional pages which have been incorporated in the work have greatly enhanced its value. As to the expediency or utility of introducing a Formulary into a manual of the kind, opinions widely differ. For our own part, we are inclined to regard the plan as a good one, although, perhaps, it would be more in accord with the tastes of his readers if Dr. Ellis had curtailed his "Formulary" and developed his "General Therapeutical Hints."

\* The Continued Fevers of Great Britain. Second edition. 1873. Page 525.

*The Diseases of the Stomach. Being the Third Edition of "The Diagnosis and Treatment of the Varieties of Dyspepsia."* By WILSON FOX, M.D., F.R.S. London: Macmillan & Co. 1872. 8vo. Pp. 236.

Two editions of Dr. Fox's Essay on the Varieties of Dyspepsia having been exhausted, he has now incorporated with that work the articles on Ulcer and Cancer of the Stomach which he contributed to "Reynolds's System of Medicine," and has produced a complete Treatise on Diseases of the Stomach, which bears testimony not only to a vast amount of work at the bed-side and in the dead house, but also to surprising research in the literature of the subject. As a work of reference, we consider the volume before us most complete, and one which every man engaged in thoroughly studying diseases of the stomach should consult. It is divided into two parts: the first part deals with the symptomatology of the stomach—in it the author offers an explanation of the manner in which flatulence, acidity, pyrosis, pain, vomiting, and other symptoms of gastric disturbance are produced, and points out the inferences as to the pathological condition present which we may draw from their existence. In the second part he describes special diseases.

When pain in the epigastric region is complained of, it is often not easy to determine, in the first place, whether or not the painful feeling is really seated in the stomach, and if we come to the conclusion that it is, to satisfy ourselves as to the morbid condition which gives rise to it. On this point Dr. Fox observes:—

"The chief difficulty lies in the discrimination of pain of purely neuralgic character from that which exists in cases of ulcer, and in the early stages of cancer, and a satisfactory conclusion can be formed only by a very careful investigation of the ætiological circumstances attending each individual case. Even with regard to these, exceptional conditions are so frequent as to invalidate almost every general rule that can be laid down.

"Purely neuralgic pain is more common in the earlier periods of life after puberty, and especially in the female sex, and is then often attended with other nervous phenomena; but, as has been remarked before, these patients are very liable to ulcer of the stomach. On the other hand, at more advanced ages, cancer may exist for years without any other symptom than violent gastrodynia, which may be completely intermitting

in its character, and may be unattended in the intervals of the attacks by any appreciable disturbance of the digestive functions.

"The relation of the pain to the state of the stomach with regard to food may often, however, as pointed out by Abercrombie, afford indications of some importance. Thus pain experienced when the stomach is empty is less common in ulcer and cancer than in the neuroses; while that following the ingestion of food has a gravity inversely proportional to the time which may elapse before the pain is felt. This, if occurring late, may be due to flatulence; though here the possibility of pyloric obstruction should warn us against a too hasty diagnosis. As a general rule it may be stated that even in the absence of hæmatemesis or of signs of pyloric obstruction, pain of great severity occurring early and continuing long after the ingestion of food, especially when associated with vomiting, and when combined with pain in the spine or scapular region, is always to be regarded with grave suspicion of its origin in organic disease.

"The indications obtainable by the effects of pressure in causing tenderness or the aggravation of pain already existing, though of some approximate value, are not such as can be certainly relied on as an absolute test of the nature of its cause. The uneasiness and pain caused by sub-acute or acute inflammatory action is almost invariably aggravated by this procedure, as is also that arising from ulcer and cancer. In cases, however, of the last-named diseases, much depends on the position of the lesion in the anterior or posterior walls of the stomach, and exceptional instances are recorded where even in these firm pressure has afforded relief. Purely nervous pain, on the other hand (independently of cases of superficial tenderness in the abdominal wall), is sometimes increased by gentle but relieved by a firmer pressure; and pain from flatulent spasm is often markedly alleviated in the same manner.

"Some other affections which may simulate gastric pain deserve also a brief notice in this place.

"Pain in the course of the transverse colon is among the most frequent of these, and it is often associated with an amount of flatulent distension which may add greatly to the difficulties of diagnosis of its seat. There is, however, generally a distinct difference, especially on gentle percussion, between the notes to be elicited from the two organs, that arising from a distended colon being the less prolonged, and having a higher pitch. Pain from this source is seldom so much felt at the ensiform cartilage as in the right or left hypochondriac regions, and it frequently extends in the direction of the sigmoid flexure. It is also associated with colicky pains and irregular contractions, which may be seen or felt by the hand, together with borborygmi, distension, and other signs of intestinal flatulence, and with migratory pains in other parts of the abdomen.

"Rheumatic pains in the abdominal muscles are another source of fallacy, which can be best distinguished by their superficial character and by tenderness on pressure and by pain excited by movement.

"Numerous instances, again, have been quoted by various writers of epigastric pain depending on functional or organic diseases of the spinal cord. In the former class of cases, when affecting the skin, this is distinguished by the very superficial tenderness (which disappears on deeper pressure), by the discovery of other painful points in the course of the nerves affected, by the absence of all symptoms referable to the stomach, and by the co-existence of an hysterical diathesis: the distinctive characters of pain residing in the muscles have been already referred to. In the latter case the presence of spinal tenderness, as ascertained by cold, heat, pressure, &c., the co-existence of some perversions of the functions of sensation or of motor power in the lower extremities, and even in the absence of the latter, the symmetrical character of the affection and the relief by rest, will generally suffice to indicate (in the absence of symptoms referable to the abdominal viscera) the nature of the affection."

In our own experience the two conditions which are most frequently mistaken for gastric pain are the infra-mammary pain so common in delicate women, especially those suffering from any uterine affection, and the pain produced by the dragging inwards of the ribs when the spine is curved towards the right. This mistake is all the more likely to occur, as in these cases food usually aggravates the pain, probably by distending the stomach and thereby rendering greater the outward pressure against the ribs. Some time ago a lady asked our advice for a pain which she believed to be in her stomach, and which, judging by the medicines prescribed, a most excellent physician, whom she had previously consulted, also considered to be due to some affection of the stomach. On being allowed to examine her in bed, we found the right shoulder-blade thrown upwards and backwards, and the lower ribs on the left side pulled strongly inwards by a lateral curvature of the spine, which a skilful disposition of her dress had effectually concealed until she was examined in bed. On the cause of the pain being explained, she obtained a suitable spinal support, which has effectually relieved all discomfort.

With the work before us, as with most of Dr. Fox's writings which we have seen, a reader who sought rapidly and readily to acquire a knowledge of the important facts will be disappointed. He aims at being too minute and exhaustive, and guards himself

from error by too frequent a reference to all possible exceptions to be a favourite author with any except with those who have both the desire and the capacity to master a subject in all its details; and although we wish to give his treatise the highest praise, we think he might make the next edition pleasanter reading by the less frequent interruption of foot-notes.

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*An Introduction to the Study of Clinical Medicine. Being a Guide to the Investigation of Disease, for the Use of Students.* By OCTAVIUS STURGES, M.D., Cantab., Fellow of the Royal College of Physicians, Assistant Physician to the Westminster Hospital. London: Smith, Elder, & Co. 1873. Small 8vo. Pp. 131.

EVERY one who has been engaged in clinical teaching knows how difficult it is to get students to understand the object and scope of a clinical investigation, and to teach them to pursue a judicious and efficient method in conducting the inquiry, and many guides to clinical study have issued from the London press. Dr. Sturges, however, considered that none of them exactly fulfilled the object of guiding the student at the bedside, and has attempted, in the volume before us, "to supply the student with just so much help as he needs, and no more." We have carefully read the volume, and while we find nothing in it from which to dissent, it does not seem to us to be one from which the student will derive much assistance—not nearly so much as he will get from Dr. Fenwick's Guide, which Dr. Sturges, in his Introduction, rather sharply criticises.

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*The Madras Manual of Hygiene. Compiled under the Orders of Government.* By SURGEON HENRY KING, A.B., M.D., Professor of Chemistry and Lecturer in Hygiene, Madras Medical College. Part I.—Air—Water—Food. Madras. 1872.

DISASTROUS as are the consequences which flow from ignorance of the laws of health in this country, they are doubly so in India, where, on the part of the natives, ignorance and prejudice, and on the part of Europeans, unwillingness to conform to the requirements of the climate, lead to a large number of the prevailing diseases. In no country is there such a field for sanitary reform, and it has already done not a little to lessen the prevalence and arrest the spread even of cholera. In carrying out this reform two things are necessary, administrative capacity on the part of those whom the



Government entrusts with sanitary measures, and an enlightened public opinion, and we are persuaded that the publication of the work before us will do much to inform and arouse the public. We have gone carefully through Dr. King's manual, and we can confidently say that for conciseness and accuracy it could hardly be surpassed. The discussion of the three important subjects of Air, Water, and Food, is undertaken both in a scientific and in a practical manner, the scientific information being given in a way which any reader of ordinary intelligence can understand, and the practical suggestions being suitable for adoption under the various conditions of European and native life in India. When the next edition is brought out, we hope a table of contents and an index will be added; these will greatly facilitate reference; and we would also suggest the introduction of a few woodcuts, which would aid the author in conveying his meaning of such matters, for instance, as arrangements for ventilation and for the filtration of water.

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*The Harveian Oration, 1873.* By GEORGE ROLLESTON, M.D., F.R.S., Linacre Professor of Anatomy and Physiology, and Fellow of Merton College, in the University of Oxford. London: Macmillan and Co. 1873. 8vo., pp. 90.

GRATIFYING, indeed, to Dr. George Burrows, President of the Royal College of Physicians of England, must it have been to have listened, in his official capacity, to the delivery of this learned and instructive address by a former pupil—the distinguished Linacre Professor of Anatomy and Physiology in the University of Oxford. And equally honourable to both the president and the lecturer are the sentiments expressed in the opening paragraph of the Harveian Oration for 1873.

The Address itself may be said to consist of two parts. In the first, the author gives a most satisfactory account of some recent advances made in our knowledge of the anatomy and physiology of the circulatory organs; and the second part is devoted to a masterly vindication of Harvey's right to be considered *par excellence* the discoverer of the circulation of the blood. The description of the moderator band discovered in the heart of a bird, the Australian Cassowary (*Casuarus Australis*), by the author himself, lends a highly scientific value to the Oration, a perusal of which will gratify equally the physiologist and the lover of literary and bibliographical research.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

GEORGE H. KIDD, M.D., President.

R. W. SMITH, M.D., Secretary.

*Renal Calculus.*—DR. E. HAMILTON said he was indebted to his friend, Mr. Bookey, for permission to bring the specimen he now exhibited before the Society. The body of a female, sixty years of age, was brought for dissection to the School of Steevens' Hospital. On opening the abdomen a large tumour was found occupying the right lumbar region, so large that it displaced the liver upwards, and the cæcum into the pelvic cavity, and resting on the psoas muscle it caused its absorption; there was complete atrophy of the muscle. The tumour presented the appearance of a large mass of fat in connexion with the kidney. The ordinary shape of the kidney was completely destroyed by this fatty deposit. Careful examination showed that it was closely connected with the kidney, and was merged into it. It presented the appearance of ordinary fat. The kidney itself was undergoing a certain degree of fatty degeneration. On making a section of it he found that this adipose tissue appeared to be the original fatty capsule of the kidney, which had undergone an enormous degree of hypertrophy; and on making a section of the kidney, a large calcareous concretion was found occupying the entire pelvis of the organ.

The corresponding ureter presented no appearance of disease. The bladder was perfectly healthy, and there was no supplementary enlargement of the opposite kidney. The weight of this tumour was 1 lb. 6 oz. and 2 drachms. There was no remarkable development of fatty tissue elsewhere. The calcareous concretion in the kidney, and the enormous mass of fatty matter round it, were the only remarkable features of the case; and the specimen was interesting in connexion with a statement made by Rokitsansky, which one would be apt to overlook, if he were not

specially endeavouring to find it in the works of that pathologist. He alluded to the fact, that in certain cases, especially of people advanced in life, there might be an enormous development of the fatty capsule of the kidney, but that this was likely to occur where the kidney was subjected to prolonged irritation caused by the presence of a calculus. This case was an illustration of the truth of his remark.—*March 1, 1873.*

*Fracture of the Cranium.*—DR. BENNETT said the history of the case, of which he now exhibited the morbid specimens, was the following:—A man of great weight, some fifteen or sixteen stone, was brought to Sir Patrick Dun's Hospital on Thursday morning in an insensible state. His breathing was slightly stertorous; his surface was warm, and the pulse was strong, and there was no sign of depression at the time; but he was perfectly unconscious, and the only other symptom that existed was that every moment both knees were equally jerked up in bed; there was no difference in the motion of either hands or arms. The symmetrical motion of the knees was the only sign that could be distinguished from his general lethargy. Previous to his admission he was seen driving an outside car, and was observed to fall from it. Those who saw him fall said he had had some fit, and that he fell in consequence of the fit. While Dr. Bennett was examining the man, his wife arrived, and she at once stated that he had been drinking hard all his life, but particularly during the last few days; that on the previous day he had one or two or more epileptic fits, and during the night one, in which he became insensible, frothed at the mouth, and worked with his limbs. She attempted to keep him at home that day, but he would go out. This was confirmatory of the statement that he had fallen from his car in consequence of a fit, and that the fit was not the consequence of the fall. It was hard to decide whether the man was suffering from simple epileptic coma or injury of the brain. There were no external symptoms, no bleeding from the ears, the nose, or the mouth, nothing but the stertor to point to the head as the seat of injury, nor was there any external mark; but those who saw him in the act of falling said he fell on his head. At about four o'clock on the day of his admission he died, and a *post-mortem* examination was made on the following day. The kidneys were large and fatty—not very much so, but they showed distinctly that degeneration so commonly seen in habitual drunkards. Nothing was discovered in the chest or abdomen as to the cause of death.

On opening the skull, with a saw, some difficulty was found in raising the calvarium off the membranes; and as the membranes were divided from this cause, black, grumous blood flowed in great quantity from the skull. On removing the calvarium, and dissecting down the membranes, he found the entire of the cerebrum covered with dark, coagulated blood, which had been poured into the cavities of the arachnoid membranes. On

removing the coagula, it appeared that the blood had escaped from the vessels of the pia mater and brain, from four extensive lacerations of the surface placed on the frontal extremities of the right and left hemispheres, on the most prominent part of the middle lobe of the right hemisphere, and on the under surface of the left anterior lobe; at each of these points the brain tissue was infiltrated with blood, and was much torn and bruised. On stripping the dura mater from the bone in the base of the skull, fractures of the base were found, extending from the right occipital condyle in two directions. The first passed through the posterior extremities of the condyle from the foramen magnum to the jugular foramen, and was continued, in the line of the inferior petrosal sinus, forward to the body of the sphenoid bone, from which it detached the greater wing, passing through the foramen rotundum, and terminating at the inner end of the sphenoidal fissure. The second fracture started from the anterior border of the foramen magnum, just at the base of the condyle in front, and passed obliquely across the basilar process of the occipital, striking into the groove of the left inferior petrosal sinus at a right angle; it then took the line of the groove forwards, detaching a small piece of bone from the basilar portion of the sphenoid, and ending in the groove for the carotid artery on the left side of the body of the sphenoid bone. The directions of these lines corresponded accurately with lines drawn from the bruises of the brain surface in front, backwards through the middle fossæ to the right occipital condyle, and indicated that the fall of the body on the occipital condyle was the cause of the fractures.—*March 1, 1873.*

*Fracture of the Cranium.*—PROFESSOR R. W. SMITH, showed the cranium of a young child (the fontanelles being still open), that had been struck upon the head with a strap, having a buckle attached to it, by a man, who came into the room when the child was playing, in a state of excitement from drink. He struck more than once. The child was dead when brought to the hospital. A large quantity of blood was effused, not only beneath the scalp, but also between the bones and the dura mater. There was a fracture of the right parietal bone, five inches in length, running from the lower part of the frontal, upwards and backwards to the lambdoid suture. The savage who inflicted this fatal injury, it may be satisfactory to state, was sentenced to penal servitude for ten years.—*March 1, 1873.*

*Rupture of the Aorta.*—DR. GERALD YEO showed the heart and aorta of an intemperate blacksmith, aged forty-four, who had been under observation for some months previous to his death. He acknowledged that he had been a very hard liver, and had venereal disease. For more than two years he had suffered from difficulty of breathing, and pain

and occasionally spat blood, and his feet had some-  
times been swollen since he was in the Whitworth Hospital for  
the first time. When he then had general anasarca, intense dyspnoea, a double  
murmur, enlargement of the heart, and a considerable amount of albumen in  
the urine, when he left hospital all these symptoms were much relieved.  
A few days afterwards, he again applied for admission, in much the same  
condition generally. Loud, moist râles were heard all over the posterior  
half of the chest. The double murmur was still audible over the base  
of the heart, but was now weak and rapid. The pulmonary distress was somewhat  
less, but the oedema of the lower extremities became more tense and  
extended up to the trunk. The urine was still highly albuminous. Fre-  
quently in the evening, he got severe attacks of angina. About three  
weeks before his death, a third bruit was heard. This was quite distinct  
from the other two, and, like them, was confined to the base of the heart.  
It followed immediately the diastolic murmur, but allowed a distinct  
pause before the systolic sound. These three sounds continued till his  
death, which occurred suddenly, while he was sitting up in bed, on the  
10th of February.

The *post-mortem* examination showed the lungs to be oedematous, and  
the bronchial mucous membrane thick and injected. The pericardium  
contained a pint of dark reddish-brown fluid, and a soft black coagulum  
which nearly filled a pint and a half measure. On the anterior aspect of  
the right auricle were large patches of ecchymosis, and a considerable  
extravasation of blood had taken place under the serous covering of the  
aorta. A straight slit, about three quarters of an inch long, extended  
across the anterior surface of the vessel, about one inch above the auricle.

This part of the aorta seemed to bulge into the pericardium. The  
auricles were small; both ventricles dilated, the left greatly hypertrophied.  
The pulmonary and aortic orifices were very wide, the latter especially.  
The aortic valves were thick, but appeared sufficient, being enormously  
increased in size, the anterior valve measuring one inch and three-  
quarters in width; they were attached to the vessel by a prominent  
ridge, which extended half an inch up the inner surface of its wall.  
The rupture of the middle and internal coats extended for two inches  
and a half across the vessel, the first stage of which was enormously  
dilated. The rupture corresponded in extent to nearly the whole of the  
aortic valves; the prominent ridge to which they were attached  
extended to the inner edge of the rupture. The coronary arteries  
were, even at the base of the heart, quite healthy; the branches  
of atherosclerotic deposits were extremely small. The  
liver was small and firm, the surface was marked  
patches of old peritonitis. The kidneys were small,  
and the ureters were dilated.

blood over the rigid valves, and that the diastolic bruit, which was heard at the commencement of the case, depended upon the blood flowing back from the elastic aorta into the dilated first portion of the vessel; the second diastolic murmur, which was subsequently developed, he considered depended upon a certain amount of regurgitation, which was permitted by the formerly sufficient valves, owing to the yielding of their point of attachment under the rupture, which thus allowed the edges of one valve to slip under the other, and render them incompetent.

Such a great amount of dilatation of the vessel, unaccompanied by any extensive disease of its wall, Dr. Yeo thought was very rare and difficult to account for, and should be referred to the combined effects of the impediment to the circulation caused by the renal disease, and the occupation of the man. He thought that the rupture had occurred gradually, taking place during the diastole, and that it was caused by the powerful drag exercised on the coats of the vessels by the immense valves, during the contraction of an elastic aorta in a state of increased tension. He dated the commencement of the rupture of the coat of the artery as far back as the first attack of angina, and the internal and middle coats must have been extensively torn when the second diastolic bruit was heard.

Dr. Yeo considered the specimen interesting, as showing how much mechanical violence and consequent dilatation the aorta might undergo, without the production of any chronic inflammatory process, which would lead to the so-called atheromatous change in the coats of the vessel.—*March 8, 1873.*

*Complete Transposition of the Viscera.*—DR. NIXON presented to the Society a case of complete transposition of the viscera. The morbid specimens were taken from the body of a boy aged about fifteen years, admitted into the Mater Misericordiæ Hospital on Friday evening last. He was seen by the resident pupil, but died a few hours after admission. No history of the case was obtained.

The *post-mortem* examination was made by his colleague, Dr. Brown. The cause of death was recent double pleurisy with effusion. The alteration of the position of the viscera was observed. The apex of the heart pointed downwards, forwards, and to the right side. The systemic portion was placed to the right; the pulmonary portion to the left. The order of the parts at the base, travelling from right to right, was—superior cava, and pulmonary artery. The arch of the aorta at first passed downwards and forwards, and to the left, then transversely backwards from the left, crossing over the upper part of the root of the right lung. It then passed down the posterior part of the sternum, lying to the right of the oesophagus. The branches of the arch were given off in the following order from left to right, and then backwards, arteria innominate and right subclavian. The arteria innominate

over the heart; he had occasionally spat blood, and his feet had sometimes swelled. Six months since he was in the Whitworth Hospital for two months. He then had general anasarca, intense dyspnœa, a double bruit over the base of the heart, and a considerable amount of albumen in his urine. When he left hospital all these symptoms were much relieved. On the 4th of January, he again applied for admission, in much the same condition as formerly. Loud, moist râles were heard all over the posterior aspect of the chest. The double murmur was still audible over the base: heart's action weak and rapid. The pulmonary distress was somewhat relieved, but the œdema of the lower extremities became more tense and extended to the trunk. The urine was still highly albuminous. Frequently, in the evening, he got severe attacks of angina. About three weeks before his death, a third bruit was heard. This was quite distinct from the other two, and, like them, was confined to the base of the heart. It followed immediately the diastolic murmur, but allowed a distinct pause before the systolic sound. These three sounds continued till his death, which occurred suddenly, while he was sitting up in bed, on the 10th of February.

The *post-mortem* examination showed the lungs to be œdematous, and the bronchial mucous membrane thick and injected. The pericardium contained a pint of dark reddish-brown fluid, and a soft black coagulum which nearly filled a pint and a half measure. On the anterior aspect of the right auricle were large patches of ecchymosis, and a considerable extravasation of blood had taken place under the serous covering of the aorta. A straight slit, about three quarters of an inch long, extended across the anterior surface of the vessel, about one inch above the auricle. This part of the aorta seemed to bulge into the pericardium. The auricles were small; both ventricles dilated, the left greatly hypertrophied. The pulmonary and aortic orifices were very wide, the latter especially. The aortic valves were thick, but appeared sufficient, being enormously increased in size, the anterior valve measuring one inch and three-quarters in width; they were attached to the vessel by a prominent ridge, which extended half an inch up the inner surface of its wall. The rupture of the middle and internal coats extended for two inches and a half across the vessel, the first stage of which was enormously dilated. The rupture corresponded in extent to nearly two of the semilunar valves; the prominent ridge to which they were attached just extended to the inferior edge of the rupture. The coats of the vessel were, even at the most dilated part, quite healthy; one very small spot of atheromatous change existed at one extremity of the lesion. The liver was small and hard, its upper surface was marked with some patches of old perihepatitis. The kidneys were small, nodulated, and engorged.

Dr. Yeo considered that the systolic bruit depended on the rush of

blood over the rigid valves, and that the diastolic bruit, which was heard at the commencement of the case, depended upon the blood flowing back from the elastic aorta into the dilated first portion of the vessel; the second diastolic murmur, which was subsequently developed, he considered depended upon a certain amount of regurgitation, which was permitted by the formerly sufficient valves, owing to the yielding of their point of attachment under the rupture, which thus allowed the edges of one valve to slip under the other, and render them incompetent.

Such a great amount of dilatation of the vessel, unaccompanied by any extensive disease of its wall, Dr. Yeo thought was very rare and difficult to account for, and should be referred to the combined effects of the impediment to the circulation caused by the renal disease, and the occupation of the man. He thought that the rupture had occurred gradually, taking place during the diastole, and that it was caused by the powerful drag exercised on the coats of the vessels by the immense valves, during the contraction of an elastic aorta in a state of increased tension. He dated the commencement of the rupture of the coat of the artery as far back as the first attack of angina, and the internal and middle coats must have been extensively torn when the second diastolic bruit was heard.

Dr. Yeo considered the specimen interesting, as showing how much mechanical violence and consequent dilatation the aorta might undergo, without the production of any chronic inflammatory process, which would lead to the so-called atheromatous change in the coats of the vessel.—*March 8, 1873.*

*Complete Transposition of the Viscera.*—DR. NIXON presented to the Society a case of complete transposition of the viscera. The morbid specimens were taken from the body of a boy aged about fifteen years, admitted into the Mater Misericordiæ Hospital on Friday evening last. He was seen by the resident pupil, but died a few hours after admission. No history of the case was obtained.

The *post-mortem* examination was made by his colleague, Dr. Brown. The cause of death was recent double pleurisy with effusion. The alteration of the position of the viscera was observed. The apex of the heart pointed downwards, forwards, and to the right side. The systemic portion was placed to the right; the pulmonic portion to the left. The order of parts at the base, travelling from left to right, was—superior cava, aorta, and pulmonary artery. The arch of the aorta at first passed upwards and forwards, and to the left, then transversely backwards from left to right, crossing over the upper part of the root of the right lung. The aorta then passed down the posterior mediastinum, lying to the right side of the œsophagus. The branches of the arch were given off in the following order—from left to right, and from before backwards, arteria innominata, right carotid and right subclavian. The arteria innominata



passed upwards and forwards to the left sterno-clavicular articulation, where it divided into left carotid and left subclavian arteries; the right branch of the pulmonary artery was shorter than the left. It gave off the ductus arteriosus, and entered the lung above its corresponding branches. The order of parts forming the root of the right lung from above downwards being artery, bronchus, vein; that of left being the bronchus, artery, vein. The superior cava passed upwards, over the front of the root of the left lung, and was joined immediately above the left bronchus by the vena azygos major, which passed by the left side of the posterior mediastinum. The left bronchus was short, wide, and transverse in direction; the right, long, narrow, and oblique. At the bifurcation of the trachea, the septum was seen to lie at the right side of the median line. The left lung was divided into three lobes, the right into two. The right pneumogastric nerve passed downwards over the arch of the aorta, giving off at the right side of the ductus arteriosus, the right recurrent laryngeal. The left recurrent nerve arose from the pneumogastric, where it crossed the left subclavian artery. Both nerves then took the usual course upwards between the trachea and œsophagus. Both pneumogastrics passed downwards to the back parts of the roots of the lungs. The right one then descended on the anterior surface of the œsophagus, and supplied the anterior surface of the stomach. The left supplied the posterior surfaces of the œsophagus and stomach. The liver occupied the left hypochondriac region, its great right lobe being directed to the left. The vessels passing up through the lesser omentum were placed as follows:—The hepatic duct to the left, the hepatic artery to the right, the vena portæ behind and between both. The cardiac end of the stomach was directed to the right side, both it and the spleen occupying the right hypochondriac region. The convexity of the duodenum was directed to the left side, lying to the left of the vertebral column. In its concavity was lodged the head of the pancreas, the tail of which passed from left to right, and touched the lower extremity of the spleen. The cæcum and its vermiform appendix occupied the left iliac region, the ascending colon lay in the left lumbar region; the descending colon in the right; the sigmoid flexion of the colon was placed in the right iliac fossa. The abdominal aorta lay on the right side of the spine. The left renal artery arose higher up than the right, but it took an oblique course downwards to the left kidney, which was placed lower down than the right one. The right renal artery had in front of it the right renal vein, whilst the left was covered by the right and left renal veins and the inferior cava. The right spermatic vein opened at right angles into the right renal vein, the left terminated obliquely in the inferior cava. He presumed the right testicle descended lower down than the left, but he had not measured the spermatic cords. The left common iliac artery was longer than the right, and posterior to it lay the right and left common

iliac veins and commencement of the inferior cava. The left iliac vein first lay internal to the artery, then crossed beneath it to its left side. The inferior vena cava passed upwards on the spine, lying to the left side of the aorta, pierced the diaphragm on the left side of the mesial line, and opened into the right auricle.

Dr. Nixon said that this was the third case of the same nature exhibited at the Society. The first was by Dr. Mayne, the second by Professor Smith. He regretted that the latter case had not been reported, as an explanation of the cause of the transposition had been offered.—*March 8, 1873.*

*Chronic Pericarditis; Caseous Pneumonia; Pleural Effusion.*—*DR. A. W. FOOT* exhibited a specimen of the results of chronic pericarditis, with an inflammatory exudation in the lung, in a state of softening, which he regarded as the starting point of the numerous "tubercles" disseminated through various organs. The parts were those of a lad of nineteen, who came into the Meath Hospital, 28th January, 1873, with a history of seven weeks' ailment, referred to the *left* side of his chest. On admission, the right pleura was full of fluid.

He had constant dyspnœa without cough or expectoration, decubitus was on the right side, his face was of a pallid leaden colour, the pulse was weak, unequal, and very rapid, sometimes, after slight excitement or exertion, uncountable at the wrist. During the 24 days which he lived in hospital, 45 observations were made on the pulse, and its average rate was 149·6, it was never under 120, and rose to 168. Of 45 observations made on his breathing, the average number of respirations per minute was 36·6, ranging from 30 to 44. The physical signs of immense pericardial distension were recognised during life. The pleural effusion was rebellious to treatment. Dyspnœa and palpitations were his principal sources of distress, and were relieved by ether and stimulants; while at rest in a semi-recumbent position, rather turned on the right side, he was content and even cheerful. He had no pain to speak of, nor was there much febrile irritation. His mean temperature, deduced from 42 observations carefully made, morning and evening, was 100·3° Fahr.; it ranged from 98° Fahr. to 102·4° Fahr. A splashing sound was occasionally audible to the ear applied against the right scapula when he hiccupped, and he sometimes heard it himself when he coughed. Anasarca of the lower extremities gradually came on, and at last, in compliance with his urgent request, the right side of the chest was punctured, 19th February, two inches beneath the apex of the scapula, and 105 oz. of light brown serum, specific gravity 1014, were withdrawn without the loss of a drop of blood. He experienced but trifling relief, and died quietly sixteen hours after the operation.

The body, examined three hours after death, was still warm, and

presented no rigor mortis, but much hypostatic congestion; the face was livid, and the superficial cervical veins much distended. There was a moderate amount of ascites; a watery blood pervaded the muscles of the trunk. The right pleural cavity presented no traces of inflammation, but its walls were bestrewn with miliary crystalline granulations; opaque, whitish, boiled-sago-like "tubercles" were disseminated through the right lung. In the summit of the lower lobe of the left lung was an inflammatory deposit, greyish yellow, the size of a date, covered, where it came to the surface of the lung, with pleuritic adhesions and exudation; of pappy consistence in its central parts, and surrounded by a redder and firmer belt of albuminous exudation. Through this lung, also, were numbers of sago-like "tubercles," most numerous in the vicinity of the deposit. There was some serum in the left pleural cavity. The pericardium and its contents occupied more than the space exposed by the removal of the sternum and costal cartilages; the mass was eight inches in vertical, and as many in the transverse measurement. It looked like a uterus in the fifth month of pregnancy, and swagged over the vertebral prominence into either pleura. Through a puncture in the pericardium, 83 oz. of brownish serum, specific gravity 1014, were withdrawn by a pipette. The pericardium was from two to five lines thick, gristly, tough, greyish-white; it cut like leather. The outer surface of the heart was densely coated with thick, soft, shaggy lymph, colourless, or of a dirty grey; the largest and most numerous ridges and processes of exudation were about the apex, where the tumultuous action of the organ had been most felt. This epicardial lymph overlaid a firmer and deeper gristly deposit, which intervened between it and the cardiac muscle; this deposit was from two to four lines thick. The walls of the right ventricle were thin, those of the left very much hypertrophied; the walls of both auricles were very much thickened by the dense deposit of lymph on their exterior; these cavities contained very small coagula; the left ventricle was empty; there was a small loose clot in the pulmonary artery; the valves were all normal.

The left lung had adhesions about its apex; the deposit in the summit and postero-lateral part of the lower lobe of the left lung had some finely injected vessels traversing it; it consisted, on section, of two portions, a clay-coloured central and a redder outside portion; the central portion was softened in parts to the consistence of thin putty and a puriform liquid. In its immediate vicinity the inter-lobar fissure was obliterated. The sago-like, shotty, yellowish-grey nodules were found throughout both lungs, but most numerous and of largest size near the softening deposit.

The retro-bronchial glands were greatly enlarged; the diaphragmatic and mediastinal pleuræ were sown with miliary tubercles. The splenic peritoneum was roughened with crystalline nodules, giving to the finger

the sensation of the finest sand, and almost invisible to the naked eye.

The spleen was large and of a deep bluish grey; the liver was normal; the kidneys, both very much congested, were, on section, of a reddish purple; the right weighed  $7\frac{1}{2}$  oz.; left  $7\frac{1}{2}$  oz. Dr. Foot considered that the state of affairs had been chronic latent pericarditis, then pneumonia of the left lung, afterwards caseous degeneration of the unresolved pneumonic exudation, and subsequently tubercular infection of the system therefrom. The right pleural effusion seemed due to two causes, the effects of pressure of the distended pericardium upon the right intercostal veins, or obstruction therefrom, and to irritation of the serous membrane by the miliary tubercles deposited on it. Before the lad came to hospital, the medical treatment had been all directed to the left side of the chest, which bore the marks of many blisters.—*March 8, 1873.*

*Tubercular Meningitis, Acute Tuberculosis.*—DR. NIXON said the specimens which he exhibited were taken from the body of a boy, aged fourteen years, admitted under his care into the Mater Misericordiæ Hospital on the 14th ult. The particulars learnt regarding the case were briefly as follows:—For a period of twelve months he had been subject to occasional attacks of headache. During five weeks prior to admission, he complained of loss of appetite, and his manner was noticed to be dull and listless. When he first saw him his pulse was feeble, but frequent. There was increased heat of skin. The tongue was covered with a white, creamy fur. The boy appeared somewhat stupid, and he complained of a slight cough. The lungs were carefully examined, but beyond a slight inequality of breathing in the left supra-spinous region, as compared with the same region on the opposite side, nothing abnormal could be detected. There was no diarrhœa, no inflation of abdomen, or abdominal tenderness. Two days after admission the stomach became very irritable. The vomited matters were green in colour, and were expelled without effort; severe shooting pains in the head were complained of. The boy became more stupid, the coating on the tongue changed to a dirty-brown colour. The urine was acid in reaction, its sp. gr. 1012, free from albumen and tube casts. It contained a large quantity of phosphates, numerous crystals of the triple phosphate being visible on microscopic examination of a recent specimen. The symptoms complained of were evidently cerebral in their origin, and the case was looked upon as one of tubercular meningitis.

On the 20th, after blistering the head, the vomiting ceased. The stage of depression set in. The pulse was reduced to sixty beats per minute. The temperature in the axilla varied from  $94^{\circ}$  to  $97^{\circ}$  F., fluctuating between morning and evening. The heat of the lower

extremities had to be maintained artificially. The cerebral stain on the skin was well marked. On the 22nd a murmur developed itself for the first time in the heart. It was post-systolic, and heard most distinctly at the apex. On the 23rd ult. there was ptosis of the left eyelid, and both pupils were dilated, the left especially so. The right arm and leg seemed to have lost all motor power, the left arm and leg were flexed and rigid. The respiration was sighing but regular. The following day the temperature rose to 102° F., the pulse quickened, being 120 beats per minute. The boy was in a state of complete stupor. He was attacked by convulsions, which were ushered in by a faint scream, and continued, with intervals of cessation, for twenty-four hours, when the breathing became very rapid, and the pulse quick and feeble. The boy gradually sunk, and died about two o'clock on the morning of the 28th. On removing the calvarium the vessels of the dura mater and the sinuses were found distended with black, fluid blood. The vessels of the cerebrum were congested. The surfaces of the hemispheres on each side of the longitudinal fissure were coated with beaded, granular lymph. The arachnoid in several places was thickened and opaque. At the base of the brain, corresponding to the great anterior subarachnoid space, he found a large deposition of lymph involving to a great extent the origin of the left third nerve. There was also an effusion of lymph on the surface of the pons Varolii. The arachnoid covering the lateral subarachnoid spaces was opaque. The lateral ventricles were distended with serum, slightly turbid from the deposition in it of small shreds of lymph. The posterior cornua were considerably enlarged. There was no marked softening of the brain substance. The heart presented no evidence of disease; its valves were normal. The right cavities were filled with black, clotted blood, and portions of dark, grumous clots were adherent to the muscular fibres of the ventricle and auricular appendix. He was unable to account for the production of the murmur which had existed, if it were not caused by the progressive debility of the muscular structure of the heart, which he thought arose in the course of the disease. The lungs presented an example of acute miliary tuberculosis. The liver and spleen also showed evidences of tubercular deposition, and small nodules of tubercle were found in the cortical substance of both kidneys.

A special point of interest in the case was the condition of the lower portion of the small intestine. The mucous membrane covering the lower third of the ileon presented a number of little projections scattered irregularly over its surface, and giving the appearance of little grains of sago or small shot being deposited beneath the mucous membrane; moreover, seven or eight of the solitary glands lying near the ileo-caecal valve were greatly enlarged, the seat of deposition and ulceration. The deposited matter was white and granular in appearance, and presented the same microscopic characters as the beaded lymph found on the surface

of the brain. The intestine was in the condition described as "psorenterie," a morbid state associated by Dr. Harley with the pathology of scarlatina, in his paper on the relation of that disease to enteric fever. A recent specimen of the same disease occurring in scarlatina was exhibited to the Society at its last meeting by Dr. Foot. There was, however, nothing in the present case to connect the diseased condition with scarlatina. The boy had been a year complaining of occasional headaches, but enjoyed otherwise tolerably good health. There was no history of sore throat or eruption; no glandular enlargements of the neck; no diseased condition of the throat; neither albuminuria nor desquamation of the skin. He thought the diseased condition of the intestine might, in the present instance, be looked upon as simply the result of the tubercular state of the system affecting the mucous membrane of the intestine, leading to infarction of the solitary glands, and producing ultimately their ulceration.—*March 8, 1873.*

*Cirrhosis of the Liver in a Child.*—DR. A. W. FOOT laid before the Society a well-marked specimen of a cirrhotic liver, taken from a boy, aged seven. The child, who was a lean, sallow, melancholic-looking object, with large dark eyes, was admitted into the Meath Hospital, 4th March, 1873. The belly and chest were covered with blue veins, especially on the right half of the body. The abdomen was distended with fluid, which had been accumulating there for a month. He had borne the ascites pretty well until a recent attack in the chest aggravated the dyspnoea. The left side of the chest gave the physical signs of pleuro-pneumonia. On the 6th the difficulty of respiration and the amount of ascites had very much increased, he could not eat or drink, and the secretion of urine was almost arrested. He was tapped with No. 2 trocar in the middle line, midway between the umbilicus and pubis, and eighty-one ounces of clear greenish serum, sp. gr. 1006, were removed with apparent relief. Twelve hours after the operation he began to moan, and slipped into a semi-comatose state, in which he died.

There was not a trace of recent peritonitis. The liver weighed  $35\frac{1}{4}$  ozs.; measured from right to left  $7\frac{1}{2}$  in.; from thick to thin border (vertical measurement)  $5\frac{1}{2}$  in.; its thickest part was 3 in. deep. The condensed peritoneal investment presented milky opacities surrounding the prominent islets of parenchyma, and was, as it were, extensively smeared over the convex surface in particular; the callous web at the extreme left margin was in process of formation; the ligaments were vascular; the adhesions numerous; substance of gland firm, granular, dull orange colour, tough and creaky to a sharp knife; gall bladder small; contents viscid orange bile. The spleen weighed 3 oz., was  $3\frac{3}{8}$  in. long, and  $2\frac{3}{8}$  in. broad; kidneys each  $2\frac{1}{2}$  oz. in weight. The left lung was in the condition of red

hepatisation, and the pleura of that side of the chest violently inflamed. The fibrinous exudation was peculiarly red. There was nothing abnormal observed about the brain or heart; the pulmonary ventricle contained a soft, amber-coloured coagulum. While there was a deficiency, and in parts a total absence, of subcutaneous fat, the appendices epiploicae and the omenta were laden with adipose tissue; the appendices seemed blunt, oblong lumps of yellow fat, and the mesentery was greatly thickened with granular fat. The state of the lung was very unfavourable for the operation of tapping, but the state of the liver was as unfavourable for inflammation of the lung. The double diseases, in the abdomen and thorax, were reciprocally hostile to life.

The rarity of cirrhosis of the liver in early life is admitted by all pathologists. Rokitsansky (*Path. Anat.*, vol. ii., p. 141), remarks, "It rarely occurs before the prime of life, but we have seen one case of it at the age of seventeen." Frerichs (*Dis. of Liver*, vol. ii., p. 84), observed this lesion in a boy ten years of age. Cheadle (*Brit. Med. Jour.*, Nov. 11, 1871), has published a case of extreme cirrhosis of the liver in a boy aged eighteen; Gordon (*Dubl. Quart. Jour.*, vol. xvii., p. 345), a remarkable case in a lad aged fifteen; Wilks (*Med. Times and Gaz.*, Nov. 29, 1862), a case in a boy eleven years of age; Hillier (*Trans. Clin. Soc.*, vol. i., p. 110), one in a boy aged 5½ years; finally, F. Weber (*Frerich's op. cit.*) has even seen it in newly-born infants, as a congenital disease transmitted from the foetal period of life. In the case submitted to the Society there was no pathological evidence of visceral syphilis; and as alcoholism was most unlikely to have been in operation, it is well to bear in mind that Gordon (*op. cit. sup.*) has been able to trace cirrhosis of the liver to three other distinct causes—a local peritonitis; a consequence of duodenitis; and to enteritis of the lower part of the intestinal canal, gradually extending upwards.—*March 8, 1873.*

*Fatty Degeneration of the Heart and other Viscera.*—Dr. A. W. Foot exhibited the heart, liver, and kidneys of an intemperate man, aged sixty-four. The viscera were penetrated with the fatty change; the large blood-vessels illustrated all the stages of the atheromatous process.

The man had been a week in the Meath Hospital; during four days of this time he had been dying. When admitted he was dropsical in the legs and belly, cyanotic, jaundiced in the eyes, and had been long deprived of sleep; the action of the heart was slow, weak, irregular, intermitting every fifth beat, without abnormal sound. The pulse never exceeded sixty in the minute, and was very difficult to count, owing to its weakness and irregularity. The area of precordial dulness was much increased, especially towards the right; the heart sounds were best heard to the right of the sternum and over the xiphoid cartilage; the epigastrium was sensitive to percussion; there was great distension of.

and visible pulsation in, the superficial cervical veins. The lungs, emphysematous anteriorly, were congested and obstructed posteriorly. He had been a hard drinker, and had sometimes consumed as much as a pint of whiskey in a day. He was moribund for the most part of four days before he expired; during this time he lay cold, blue, unconscious, breathing heavily, occasionally calling out, taking no nourishment, and passing under him.

Notwithstanding the protracted death, rigor mortis was strong and general twenty hours after death, when the body came to be examined. The corpse measured five feet eight inches in length, and was the remains of a large and powerful man. He was the subject of double inguinal hernia; each internal ring admitted of the passage of the tips of three fingers; an oval cyst, as large as a filbert, containing yellow fluid, was found loosely attached to the left internal ring. The costal cartilages were calcified, the brittle ribs broke like biscuit under the bone forceps; each sterno-clavicular articulation was the seat of chronic rheumatic arthritis. The lungs, emphysematous in front, pressed forwards without any tendency to collapse; both were posteriorly much congested, and the right so firmly attached to the back of the thorax by old adhesions as to require to be cut out. The pericardium contained several ounces of straw-coloured serum. The heart was very large, measuring six inches across the base, and seven and a half inches obliquely from the right auricle to the left apex; all the chambers were dilated, and they were each distended with jet black coagula. The left ventricle was seven lines thick at base, five at mid-point, four at apex; the interior of this ventricle was three three-eighth inches long from the convex attached margin of one aortic valve to the apex; at its mid-point it was two and a-half inches wide. The right ventricle was three inches long and three wide; at the apex and mid-point its wall was two lines thick, and at the base one and a-half lines. The interior of the right ventricle presented the sub-endocardial, buff striæ, so beautifully represented in Pl. 68, Fig. 1, 2, of "*Lebert's Atlas*;" these macroscopic characters of fatty degeneration were particularly visible on the muscular tissue of the infundibulum. A piece of muscle from the outer wall of this chamber showed absence of the striæ, and some of the earlier stages of the intra-sarcomellar form of fatty degeneration. The pulmonary valves were large, but smooth and competent. A spicula of calcified atheroma was observed in one of the aortic valves, but they held water well, and were not roughened in their ventricular aspect. The mitral orifice was enlarged from eccentric hypertrophy of the left ventricle, and admitted of the passage of three fingers up to the second joint. In the aorta the atheromatous process was specially obvious where the mechanical irritation of the blood current was greatest, at the curve of the arch, and the points of origin and division of the larger vessels. The lining membrane of the



vessel was friable and easily lacerated transversely; the elastic lamina could be peeled up and rubbed away like layers off damp card board.

The liver weighed  $61\frac{1}{2}$  oz., was of a pale drab colour like that of sulphur electuary, and presented a combination of cirrhosis and steatosis; the Spigelian lobe was quite suppressed; thickened and condensed peritoneum covered the barely perceptible prominence which occupied its situation; in other respects the cirrhotic condition was not very far advanced; the convex surface was becoming granular, and was covered with condensed, opaque peritoneum, and showed frequent cicatricial depressions, and milky thickenings of the capsule. The section presented the appearance called nutmeg or myristicated; the venulæ centrales, dark and dilated from cardiac congestion, being surrounded by the light-coloured, fatty peripheral cells; the contrast in colour was very striking. On the under surface of the left lobe, near its splenic margin, several large veins lay superficial and uncovered by glandular structure. The fat of the liver amounted to 9·4 per cent., or 41·10 grs. of fat to each oz. of liver; the total quantity of oily fat in the liver was 2529·18 grains. The hepatic cells were extensively infiltrated with fat drops. The gall bladder contained  $1\frac{1}{2}$  oz. of thick orange-coloured bile, and thirty-four small, glossy-green, warty calculi, like dried currants. The large, smooth kidneys weighed  $7\frac{1}{2}$  and  $6\frac{1}{2}$  oz.; the tubular epithelium was fatty, the larger branches of the arteries atheromatous, the exterior of the organs preserved the traces of their early lobulation. The capsules peeled off with the greatest facility; there was one cyst in the centre of the cortex of the left kidney. The spleen weighed  $5\frac{1}{2}$  oz., its capsule was thickened with much whitish, condensed peritoneum.

The connexion between alcoholism and fatty degeneration has been observed by many. The most exquisite case of fatty degeneration of the liver which Addison<sup>a</sup> ever saw, occurred in a female who had for some time subsisted almost exclusively on ardent spirits. Frerichs<sup>b</sup> found that of thirteen individuals who died of delirium tremens, in six the liver was very fatty. The amount of fat in the liver in this case, 9·4 per cent., was by no means large, but taken in connexion with the fatty degeneration of the heart, arteries, and kidneys, and the history of intemperance, it may be regarded as an integral part of the drunkard's dyscrasia. The amount of fat got from healthy livers has been 2·50, 3·65, 3·82 per cent. In extreme cases of fatty liver, the amount of oil contained in the organ is immense, 45 per cent. (Vauquelin), 53·13 per cent. (Bacon), 65·19 per cent. (Beale), 76·6 and 78·07 per cent. (Frerichs).—*Marsh* 15, 1873.

*Bones of the Stump, after Amputation of a Portion of the Foot.*—PROFESSOR R. W. SMITH brought under the notice of the Society the bones of the

<sup>a</sup> Addison's Works, Syd. Soc., p. 106.

<sup>b</sup> Dia. of Liver, vol. i., p. 299., Syd. Soc. Trans.

stump, in a case in which he had several years ago removed the anterior part of the foot. He also exhibited the cast of the leg and foot, taken long after the wound had healed.

The case was that of a man, named Francis Russel, aged fifty-seven. He was admitted into the Richmond Hospital, February 1st, 1864, eleven days before which date a very large piece of rock had fallen upon the dorsum of his right foot, inflicting an injury of so severe a nature that gangrene rapidly ensued. He suffered extreme pain, but had no serious constitutional disturbance. The gangrene spread over the dorsal region of the foot, to within a short distance of its centre, but upon the plantar aspect was much more limited in extent. As soon as it ceased to spread, and the line of separation was sufficiently advanced, he removed the dead portion of the limb by an incision, carried transversely in front of the navicular and cuboid bones, and posterior to the cuneiform and fourth and fifth metatarsal bones. As long a flap as possible was taken from the plantar region, turned up over the face of the stump, and brought into contact with the edge of the dorsal flap everywhere, except over a portion of the cuboid bone, where the two did not meet. This circumstance caused much subsequent embarrassment, and for a very long period, prevented the perfect cicatrization of the wound. He left the hospital in August, 1865, able to walk without pain or difficulty.

In June, 1866, he was re-admitted, that portion of the cicatrix situated over the cuboid bone having ulcerated a fortnight previously. Upon this occasion he was an inmate of the institution, until November, 1867, when he returned home, the ulcer having at length healed. From this period, up to his decease in 1872, the cicatrix remained sound.

In the latter part of 1871, however, he sought and obtained admission again, and for the last time. He was now suffering from Pott's gangrene of the opposite foot. The disease ran its accustomed course to a fatal termination, but was accompanied by far more constant and excruciating pain than usually attends this formidable malady. Opium and cicuta, &c., were pushed to the utmost limits, and given in every form, without producing even a short, undisturbed repose. The examination of the bones, constituting the face of the stump, was attended with some little interest, the line of amputation being unusual.

The bones in question were the cuboid and navicular, and their condition may be described in a few words. They were firmly ankylosed to one another, and also to the os calcis; the navicular bone retained nearly its normal dimensions, and a few osseous growths had sprung up from the superior margin of its anterior surface, but the cuboid had suffered much more remarkable alterations of form and dimensions. Its antero-posterior diameter was somewhat less than natural, but its vertical depth was greatly increased, its superior margin being curved backwards and prolonged upwards, at least three-fourths of an inch above the articular

surface of the os calcis, with which it is normally connected. The ankle-joint was perfectly healthy.

The obvious advantage of the operation over that of Chopart, consists in the greater length of the portion of the foot that is left, and, as Sir W. Fergusson has observed, nothing but extreme necessity, from the nature and extent of disease and injury, should induce the surgeon to sacrifice so large a portion of the foot as that involved in the operation of the distinguished French surgeon. It seems scarcely necessary to observe that the cases in which the medio-tarsal amputation is practicable, must necessarily be of comparatively rare occurrence. Professor Smith observed that he was not aware whether this line of amputation had been adopted before or not, nor was it a matter of any consequence, for in the recording of cases the great object should be the establishment of truth and the advancement of science.—*March 15, 1873.*

*Unilateral Chorea ; Disease of the Corpus Striatum and Optic Thalamus on the side opposite to that affected.*—*DR. A. W. FOOT* exhibited the viscera of a man, aged sixty-eight, affected with unilateral chorea, and who had died of capillary bronchitis.

The subject from whom the specimens had been taken was an old man, of very intemperate habits; he was near seventy years of age. He considered himself in good health, and was kneeling in a chapel between 10 and 11 o'clock, a.m., on Monday, 3rd February, 1873, when a sudden "twitching" commenced in his left hand. This muscular agitation quickly extended to the left side of his face, and then to his left leg! He was helped to his home, where he remained for two days, when, finding that the "convulsions" of the left side continued violent and unabated, and that he was deprived of any sleep at night, he sought advice at the Meath Hospital, 5th February, forty-eight hours after the commencement of the attack. He was a haggard, anæmic, grey-haired old man, evidently suffering from great nervous exhaustion. As he stood, with the support of a stick, the strictly unilateral form of the chorea was very obvious. The muscles of the left side of the face pulled and twisted his visage in every direction, so that he leered and grimaced ludicrously from the incessant clonic contractions of the muscles, particularly of those about the eye and mouth; his head was repeatedly jerked towards the left shoulder, and the shoulder as often hitched up towards the left ear. Intelligence and speech were unaffected, although articulation was indistinct from the inco-ordination of half of the oral muscles; the tongue was steady. The left upper extremity involuntarily performed every movement its articulations permitted of. He held his hat in the left hand, but knocked it about sadly; with the greatest difficulty he succeeded in putting his handkerchief into his pocket. The left leg, the part least affected, fidgetted about in a restless manner, and was shuffled

backwards and forwards along the floor. The right half of the body was quite quiet and steady. There was no paralysis anywhere; no tremor on either side; perfect sensibility to touch, pain, temperature, tickling, and weight. He had no sense of fatigue in the restless parts; had "neither pain nor ache," only a little stiffness in the back of the neck.

The appetite being good, and muscles of mastication and deglutition unaffected, his violent movements and comical gestures made him an object of great attraction. Dr. Stokes, who was present when the case was admitted, regarded him with the greatest interest. The man was quite unable to control the movements of his left limbs, and they were aggravated by questioning him or examining them. When forcibly held, he gave one the idea of a prisoner wrestling and struggling to break loose; and when the arm was overpowered by superior force, the muscles seemed to change their fixed points of action, and jerked the body from the now fixed arm, instead of as before, when the free arm acted, from the more fixed trunk. The movement of the heart was slow, and unattended with abnormal sounds: after every fourth contraction there was a pause. He had had "rheumatism" for three weeks, fourteen years ago; he had been in the Meath Hospital, twenty-eight months ago, for severe epistaxis, which required plugging of the anterior nostrils.

There was much difficulty in keeping him covered in bed, owing to the incessant commotion of his limbs; he soon rubbed his left elbow out through a thick, strong Jersey, and then rubbed the skin off his elbow. He was observed to be perfectly quiet during sleep. On the 8th Feb., the fourth day after admission, he observed that the left arm was now sometimes quiet for five minutes at a time, whereas it had not hitherto remained so for a moment except during sleep. On the 9th, the movements of the facial muscles were obviously less, and the leg remained quiet, unless, as he said, "attention was drawn down to it," when it kicked up the bed-clothes. On the 11th, the chorea had so much subsided that it would hardly have attracted the attention of one passing through the ward. About this time, when he was evidently improving, he caught cold. The nights were extremely frosty; he rose very frequently to make water (which was albuminous); he was also in the habit of sitting up at the fire to smoke (and strange to say, he could, at his worst time, hold the pipe in either side of the mouth); and he also frequently worked the bed-clothes off himself by his irregular muscular movements. Exposure to cold in these various ways brought on bronchitis, which, at first confined to the large tubes, became before long capillary, and was the immediate cause of his death. The albuminous urine and frequent micturition were considered very unfavourable, and a careful examination of the quantity and quality of the urine was made, of which the following is the laboratory note:—

"Urine, 11—12 Feb. = 24 hours = 31 fl. oz.; opaque, brownish yellow; acid, sp. gr. 1024. Albumen copious. Urea = 34 grs. per 1000 grs. urine; total quantity urea = 461·125 grs.; phosphoric acid = 2·2 grs. per 1000 grs. urine; total quantity phosphoric acid = 29·837 grs. The peculiar viscous nature of the precipitated albumen made it impracticable to estimate it quantitatively with sufficient accuracy."

The choreic movements subsided almost completely, unless during fits of coughing, at which times they were well marked. On the 13th his voice began to fail, and had the character of a paralytic hoarseness. He died on the 21st Feb., nineteen days after the choreic seizure, and seventeen after his admission to hospital. Up to the 16th his pulse averaged 65; after that date it became more rapid, and reached 112 and 124 before he died.

The body was examined four hours after death; rigor mortis was not present in the articulations of the extremities on either side. The brain and spinal cord, removed together, weighed together 45½ oz.; the cerebro-spinal fluid was more abundant than usual, as indicated by the amount of fluctuation observed before the theca vertebralis was opened. The spinal dura mater was adherent to the back of the bodies of the seventh and eight dorsal vertebræ, and was here much thickened, gristly, and semi-cartilaginous. The cranial dura mater was so firmly adherent to the calvarium, that the falx cerebri had to be cut, leaving the superior longitudinal sinus attached to the skull-cap, or the brain would have been injured in its removal. Milky opacities of the arachnoid, shrivelling of the convolutions, and increased amount of sub-arachnoid fluid were noticed, but not more than usually result from senile changes in the brain. All the cerebral arteries, both basal and cortical, presented the whitish cylindrical thickenings of atheroma, in rings, patches, and spots. The right vertebral artery, as it lay beside the medulla oblongata, was very much reduced in calibre, looking like a piece of very thin twine; while the left one—thickened, white, and corrugated on its inner surface—was about six times as large, and resembled the posterior tibial artery in size. All the branches of each middle cerebral artery were more or less diseased, as well as the main vessels; in none could any distinct recent obstruction be made out with the naked eye. The cortical arteries were sufficiently thickened in many places to oppose a very perceptible resistance to the knife used in slicing the hemispheres. Each corpus striatum presented several dull, purple blotches, immediately beneath the ependyma. On the surface and towards the anterior end of the corpus striatum of the side opposite to that which had been affected, were two shallow depressions, underneath which were two delicately encysted depots of white diffuent brain substance, showing "granular corpuscles," with molecular and fatty debris. Running transversely across the deepest part of the interior of

the optic thalamus of the same side (right), was a deeply discoloured track, orange-red at the end approaching the lateral ventricle, plum-red at the opposite end where it approached the quadrigeminal bodies. There was symmetrical deposit of sabulous matter in the lateral choroid plexuses; the ventricular fluid was not abnormal in quantity. The cerebellum was soft and greasy, its left superior artery very much diseased. The spinal cord presented no obvious anomaly.

The atheromatous change was conspicuous in the aorta and its large branches; stiff, pale-yellow plates alternating with reddish, roughened depressions. The aortic valves held water, and were smooth, though thickened; the wall of the left ventricle was one inch thick at the base, the same at the middle part, and seven lines at the apex; the cavity not dilated; the muscle was firm and red, and very devoid of epicardial fat. None of the cardiac valves had vegetations; the larger curtain of the mitral valve alone was atheromatous, in parts showing mitral valvulitis, from the increased strain of an hypertrophied ventricle. The kidneys each presented the characters of granular disease in a marked form; they weighed  $5\frac{1}{2}$  oz. and  $4\frac{3}{4}$  oz.; were hard, tough, and resistant, reddish-brown, cystic; the tunica propria was milky, thickened, and adherent. The section had a coarse, granular texture; was of a uniform red-brown colour; the cortex formed a rim of about a line in thickness round the bases of the pyramids; the renal arteries external to the pelvis were very atheromatous. The lungs presented the anatomical characters of capillary bronchitis and its results; a large mass of succulent lymphatic glands pressed upon the left recurrent nerve, accounting, probably, for the dysphonia observed late in the case.—*March 15, 1873.*

*Fracture of the Skull.—Dislocation of the Shoulder; Fracture of the coracoid Process.*—DR. BENNETT presented to the Society a specimen of fracture of the base of the skull, and also of recent dislocation of the humerus, with fracture of the coracoid process of the scapula. Casts of the dislocation before dissection, and of the stages of the *post-mortem* examination, were also laid on the table. The following was the history of the case :—

A labourer, thirty-five years of age, was admitted in a state of complete coma into Sir P. Dun's Hospital, on the evening of February 7th, 1872. He had slipped, shortly before his admission, while walking along a plank, placed over the open hatchway of a vessel, and fell a height of nearly twenty feet, lighting upon the kelson. At the moment of his fall, his fellow-workmen noticed that he had his right hand in the pocket of his breeches. Two wounds, each nearly an inch in length, extended from the outer part of the right eyebrow outward, towards the temple, but in neither was the bone exposed. Blood flowed in small quantity from the right nostril and from the left ear, and continued to flow for

some time after his admission from both. His right eye was blackened with a partial effusion of blood beneath the ocular conjunctiva, and the eye-ball was protruded from the orbit. Slight irregularity of the right external angular process of the frontal bone could be felt. The right humerus was dislocated, and to it the only movements of a voluntary character were directed. He passed the left hand across to the right shoulder every now and then, and pushed away any hand laid on it to examine or move it. He had no distinct paralysis, but passed urine and fæces involuntarily. His breathing was difficult, and there was occasional moaning. He appeared to be hyperæsthetic, for he became restless and excited by the exposing of his body to the air, or when the cold hand was passed over his skin. His pulse ranged between 50 and 60 until the evening of the 9th, when it rose to 110. On the following morning he died. No operative interference was considered advisable, as the injury of the skull was considered to be fracture of the base, and any attempt to reduce the dislocation seemed unwise, as the man's condition appeared hopeless.

On dissection, the brain was found to be very much compressed, the convolutions, particularly on its right side, being flattened; the posterior lobes of the brain were slightly bruised, but no extensive injury of the brain substance, except its compression, existed. On removing the brain the compression was found to be due to two large blood clots seated between the dura mater and the bone, the first in the right anterior fossa, the second in the right middle fossa of the skull. These clots were of considerable thickness, and had separated the dura mater entirely from the bone in the anterior fossa, and in the middle from the anterior part of the space. From the middle of the right superciliary ridge of the frontal bone, two curved lines of fracture passed, at first upwards, and then backwards horizontally, to the lower end of the coronal suture; on the superciliary ridge these fractures were but a quarter of an inch asunder, and at the coronal suture in the temporal fossa they were separated by half an inch. Along the upper fracture the piece of bone included by them was slightly depressed, while its lower border was slightly elevated above the base of the angular process. From the coronal suture, where these two fractures terminated, a long line of fracture ran down through the inferior angle of the right parietal bone and great wing of the sphenoid, across the middle fossa to the sphenoid bone. It traversed the pituitary fossa, and then passed backwards and outwards through the petrous portion of the left temporal bone, splitting the roof of the tympanum and external auditory meatus. It ended by passing upwards through the squamous division of the bone to the posterior part of the squamous suture. From the outer of the two fractures of the superciliary border, a fissure passed through the roof of the orbit inwards to the olfactory fossa, from which it turned backwards to the body of the

sphenoid, and joined the posterior line of fracture on the left side of the pituitary fossa. The area of the bone included between these two fractures of the base and those passing from the brow to the temple, which was the district from which the blood clots had separated the dura mater, was broken (particularly the orbital plate of the frontal bone) into many pieces. All these pieces were slightly projected into the cavity of the skull, and retained their abnormal positions even in the macerated bone.

Nothing remarkable was noticed in the external features of the dislocation of the right humerus, which were preserved in the cast exhibited. The cast had been taken from the body after death. The limb, on careful measurement, was found to be exactly the same length as the left. The arm was separated from the side, and directed slightly backwards, and the shoulder was flattened. It was a dislocation into the axilla, a term objected to by some, but still sufficiently correct, if we discontinue the use of the adverb "downwards," applied with it by Sir A. Cooper. On raising the deltoid muscle the upper extremity of the humerus was found to be placed directly beneath the coracoid process of the scapula, the greater tuberosity being placed on the outside of the centre of the tip of the process, while the head and lesser tuberosity lay to the inner side of this point. The fibres of the external capsular muscles were drawn tightly across the glenoid cavity of the scapula, and slight blood effusion amongst the fibres showed that they had been strained almost to rupture. A blood clot occupied the sac of the displaced subdeltoid bursa. On the inside, the head of the humerus showed through the tendon of the subscapular muscle the united fibres of it and of the capsule, being so stretched as to allow the cartilage to show, without the rupture being so complete as to place the head of the bone naked in the cavity of the axilla. The greater part of the tendon and muscle lay to the lower side of the partially torn piece. On raising the subscapular muscle, and reflecting it towards its insertion, a large part of the articular cartilage of the humerus was seen exposed through a rent of the capsular ligament, which had been torn from the entire inner border of the glenoid cavity. The part of the ligament connected to the inferior border of the glenoid cavity was strained, to the utmost, over the internal side of the articular surface of the humerus, which had all but forced its way through it, where the subscapular tendon is connected with it. The tendon of the biceps was uninjured. During the dissection it was discovered that the coracoid process had been fractured. No displacement of the fractured portion had taken place. The fracture ran obliquely from the inner and upper border of the process, just beyond the attachment of the coraco-clavicular ligaments, downwards and outwards towards its tip; it terminated on the external border, a quarter of an inch from its summit.



The humerus rested against the inner border of the glenoid cavity of the scapula, the convex portion of the border resting in the deep groove which defines the anatomical neck of the bone between the posterior extremity of the great tuberosity and the border of the articular cartilage. A partial fracture of the humerus, or rather a fissure, existed in this position, which extended a little way downwards into the compact tissue of the shaft of the bone. The entire length of the fracture was an inch and an eighth. There could be no doubt that it had been produced by the humerus being forcibly driven against the border of the glenoid cavity, by which the outer table of the bone had been crushed. The chief interest of the examination of this dislocation consisted in its being complicated by the fracture of the coracoid process, and perhaps, too, by the injury of the outer table of the humerus itself. The case in all its details fully bears out the correctness of the remarks with which Malgaigne introduces his notice of fracture of the coracoid process. He says:—"This fracture is excessively rare, and does not occur except in company with other fractures and enormous contusion of the soft parts. So the case is generally of the gravest nature." The position of the patient's arm at the time of his fall, namely, "with his hand in the pocket of his breeches," was noted in the account of the injury taken by the resident pupil from the men who carried him to hospital, and was written down before any knowledge of the fracture of the coracoid process existed, so that there can be no doubt of its accuracy. This exceptional position of the limb appears to have determined the rare complication in this case. The remarks of Dr. Adams (*Cyclopædia of Anatomy and Physiology*, vol. iv., page 613) on the diagnosis between fractures of the superior extremity of the humerus and dislocations of the shoulder-joint, state very clearly the influence that the position of the limb at the time of the infliction of the injury has upon its nature. He says:—"If when the patient is falling, his arm is separated from his body, directed forwards, or outwards, as it were instinctively to break the fall, and save the upper part of the body, if, under these circumstances, displacement of the upper part of the humerus occurs, the existing deformity will be found to be the result of dislocation; but if, on the contrary, the fall takes place when the arm is by the side, as, for instance, *in the breeches pocket*, and no effort is made by the patient, at the moment of his fall, to raise his arm, the momentum and weight of the body have been received on the point of the shoulder, and the resulting injury has been most probably, a fracture of the head and upper part of the humerus." In this case the coracoid process was either fractured in consequence of the head of the humerus being forced against its under surface at the moment of its passage from the glenoid cavity, the head of the bone not being depressed in the joint, as it is by separation of the limb from the side, and so not readily clearing the coracoid process in its passage to its

new position, or the process was broken, and the border of the glenoid cavity driven into the humerus, by some violence applied to the scapula, subsequently to the occurrence of the dislocation. This latter interpretation would seem the more correct of the two, but the constrained position of the lower end of the humerus would appear to be equally necessary to either mode of production of the injury.—*March 15, 1873.*

*Effects of Strain upon the Right Heart.—Capillary Bronchitis in a Cirrhotic Lung.*—**DR. A. W. FOOT** exhibited the heart and lungs of a man, aged forty, who had died of capillary bronchitis. The specimens further exhibited the effects of chronic strain upon the right side of the heart. The patient had been a hodman, carrying loads of bricks and mortar up ladders, and had continued at this severe and continuous work, notwithstanding a "heavy cold," until he became quite disabled. He was admitted into the Meath Hospital, 17th March, 1873, almost moribund, with cedematous feet, expectorating profuse quantities of thick, airless, yellow, coherent sputa; he died on the 21st.

The body was examined twenty hours after death; the face was pale, superficial cervical veins distended, rigor mortis well marked. Except the first on each side, the costal cartilages were of their usual consistence; when the sternum and cartilages were removed, the emphysematous anterior margins of the lungs, especially of the left, protruded as a pale and cushiony mass. The right lung, enveloped in adhesions, was reduced in size, condensed and airless in structure, and traversed by dilated bronchial tubes, especially in its upper and middle lobes. The left was hypertrophied and emphysematous, dark, and engorged posteriorly. The right lung was firmly adherent to the antero-lateral boundaries of the chest by white, fleecy, dry adhesions; behind and at the summit the adhesions were firmer, and posteriorly the attachments of this lung had to be divided with the knife, inch by inch, to accomplish its removal from the body, and even so, some portions of it had to be left behind; its base was intimately united to the diaphragm. Stringy layers of old adhesive lymph covered its surface, fastening its lobes together, uniting its root to the aorta, and its anterior margin to the pericardium. The left lung was voluminous, considerably larger than the opposite one, non-adherent, save for one apical band, and one in front about the region of the nipple. The right lung was darker, firmer, and denser than the other, the lining membrane of the many dilated air tubes in its interior was inflamed, and of a violet-pinkish colour; a yellowish-green mucopurulent fluid exuded from their transverse sections in many places. The bronchial inflammation had affected the tubes in this lung much more than in the left one. The branches of the pulmonary artery distributed through the right lung were plugged with black sticks of stiffly coagulated blood.

The pericardium contained no fluid. The heart presented the form of a square, its free inferior border forming a straight line at right angles with the axis of the body, the right ventricle was very much hypertrophied, the muscular prominences of its cavity increased in number and size, the pulmonary valves relatively stronger and more developed than the aortic valves, the "nodulus Arantii" in each of them very conspicuous, the pulmonary artery was dilated, and its right branch very remarkably so. The most curious feature about this ventricle, and one bearing on the square shape of the heart, was, that the apex had worked itself so far round to the left that it had passed beyond the inter-ventricular septum, past the usual situation of the right apex, so that an incision through the anterior wall of the left ventricle, parallel to, and an inch to the left of the septum, divided, at its lower margin, some of the trabecular bands of the right ventricle. At first it appeared as if the muscle of the apex of the left ventricle was in a state of cavernous degeneration, as the inter-trabecular spaces, cut across at right angles, were filled with black coagula, but it was soon found that a probe passed from any of these into the cavity of the right ventricle. That these passages under the left ventricle were not aneurismal tunnellings, was shown by absence of any endocardial alterations about their orifices, and the continuation into these recesses of the carneæ columnæ of the right ventricle. The outer surface of this chamber had an extensive and well-defined patch of chronic epicarditis, and there were some specks of atheroma immediately above the pulmonary valves. The aortic and mitral valves were normal; the much dilated right auricle contained a large black coagulum, which was continued into the right ventricle, whence it passed into the pulmonary artery, and far on beyond its bifurcation. There was a thin but closely applied sheet of fat upon the exterior of the heart; the cardiac muscle appeared to be softer than in health. The liver weighed  $48\frac{1}{2}$  ounces, its consistence and colour were normal; its convex surface presented three shallow grooves, probably owing to lateral compression exercised by the abdominal muscles during his labourious employment; the thick border of the liver was also flattened in a plane inclined downwards and forwards towards a smooth ridge where the convexity of its anterior or abdominal surface began. The gall bladder was moderately distended with thick red-brown bile. The greyish-blue spleen weighed  $4\frac{1}{2}$  oz. The kidneys (left 6 oz., right  $5\frac{1}{2}$  oz.) enveloped in much soft, greasy fat, were smooth and normal, unless in some degree fatty.

Dr. Foot considered the fatality of the bronchitis largely due to the fact of its having attacked the tubes of the cirrhotic lung, and to the emphysematous condition of the opposite organ.—*March 22, 1873.*

*Ophthalmia.*—MR. WILSON exhibited the right eyeball which he had extracted from a man, aged forty. The patient stated that in early life

he lost the sight of this eye; but that it did not give him any trouble last winter. He then started on a voyage from this country to South America, and received a blow on the blind eye. Great pain was the consequence; so great that he was unable to do his duty, and was for six weeks confined to the cabin of the ship. He came home in the end of January, and had been under treatment until the beginning of the present month. He then came under his (Mr. Wilson's) observation. The eye being very painful, and the other eye sympathising in the disease, he decided on removing the blind eye. The man at the time was unable to read, scarcely able to make his way about without being led, and there was great intolerance of light in the healthy eye. On making a section of the eyeball, he found the retina was a mere thread by which he could hold up the eye. It ran string-like forward from the optic nerve entrance to the ora serrata, collapsed upon itself. The whole of the space between it and the choroid was occupied by blood, which increased the intraocular tension, pressed on the ciliary region, and finally gave rise to sympathetic ophthalmia. One most remarkable feature was, the total absence of pigment in the choroid. Generally it was a brown, black membrane; in the present case it was very thin, and almost transparent, and composed of cellular tissue only; and he could raise it easily off the sclerotic. The ciliary region was thickened; there had been a constant drag on it, and there had been adhesion of the iris to the cornea.—*March 22, 1873.*

*Diffuse Atheroma of the Arteries.*—DR. A. W. FOOT exhibited the heart and aorta of a man, aged seventy-three, who had died suddenly when apparently recovering from the symptoms—ascites, anasarca, and dyspnoea—for which he had come into hospital. There had been no abnormal cardiac sound, but the action of the heart had been weak, irregular, tumbling and intermitting. There was jugular pulsation in the right side of the neck, his urine was scanty, arcus senilis was well-marked on upper margin of each cornea; he had a hydrocele in the right tunica vaginalis from which 21 oz. of serum were removed by tapping. He died nine days after admission. He had just eaten his breakfast and was sitting up in bed, when he began to vomit, and died at once in doing so.

The body was examined eight hours after death; there was very little rigor mortis except in the muscles of the back of the neck. There was no foreign body (food, etc.) in the larynx or trachea. The pericardium contained  $7\frac{1}{2}$  ozs. straw-coloured serum. spec. grav. 1018; the heart was large, its muscle red and firm; the valves were all competent; on the anterior curtain of the mitral valve were some small soft spots of atheroma, but there was no rigidity of the membrane; a few specks of atheroma in an early stage were seen in the pulmonary artery. With the exception of the ascending and part of the transverse portion of the arch, the aorta,

to its bifurcation, presented a typical example of diffuse atheroma, and with the exception of its visceral branches, all the arteries springing from it exhibited the atheromatous process in the highest degree. Calcified plates were conspicuous in the rigid femoral arteries, as well as in the inter-cranial portions of the carotids. The first portion of the arch was dilated, and had lost its elasticity; the abdominal, as well as the thoracic aorta, was quite brittle; it chipped and cracked in all directions; at many points blood had escaped and made its way beneath the external coat, staining the outside of the vessel crimson. Scattered throughout the substance of either lung and sown over the pulmonary pleuræ, where they felt like fine shot, were innumerable small, uniform sized, pearly granules; in the apex of one lung a white cheesy nodule like a bean projected from a cicatrix. The liver presented on its convex surface several milky patches of condensed peritoneum, especially over the left lobe, the edge of which had become altered into a grey web; the gall bladder, green externally, was moderately distended with bile, and did not contain any calculi. The kidneys were firm and dark on section, but of natural weight, size, and shape. The spleen was of medium size, without deposit in it. Stomach contracted, as well as the small and large intestines; œsophagus full of vomited matters. There was no hæmorrhage or embolism discoverable in the dissection of the brain, all the larger basal arteries were more or less atheromatous. Dr. Foot regarded the dilated and inelastic state of the aorta as the most important pathological condition, and considered that the sudden death was immediately due to want of the aortic systole as a factor in the means of closing the aortic valves, which were otherwise competent.—*March 22, 1873.*

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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NOVEMBER 1, 1873.

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### PART I.,

### ORIGINAL COMMUNICATIONS.

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ART. XIX.—*New Bulbed Stricture Sound for Exploring the Urethra from Behind Forward.* By B. WILLS RICHARDSON, Fellow and Examiner, Royal College of Surgeons; and Surgeon to the Adelaide Hospital, Dublin.

SOUNDS have been, from time to time, invented, for the exploration of the male urethra, with the object of ascertaining the position of a coarctation or stricture, but none of these instruments is capable of affording very trustworthy evidence of the length or extent of a stricture, although they afford, when skilfully used, tolerably accurate evidence of the distance of the anterior extremity or front of the stricture, from the orifice of the meatus.

The wax bougie, which is of some value in the treatment of certain strictures, Voillemier observes, cannot teach us anything of the length of the stricture, its direction, and its seat from the orifice. He explains its inefficiency for the resolution of these diagnostic points thus:—"The bougie presses into the stricture as into a draw-plate, and, after having cleared it, does not recover its volume, although it is in rather a wide portion of the canal; should it recover it, its size would be again reduced in repassing through the stricture. Now, this diminution in volume, in a certain length of the bougie, indicates only one thing—the narrowness of the passage through which the bougie has traversed. As to the length of the stricture, its direction, the situation of its orifice, it cannot

teach anything. It will be objected, perhaps, that the urethra is not an inert canal, and that the stricture, in contracting, will mark its impression on the bougie. But should it do that, the impression would not be the less effaced, because the portion of bougie which is beyond the stricture is obliged to clear it when we withdraw it."

Even Ducamp's plaster bougies for exploring a stricture from before backward, as shown by Voillemier, may likewise lead to very incorrect ideas regarding it.

Of this bougie he speaks in the following terms:—"It is a hollow bougie, terminating in a brush of silk impasted with a mixture composed of equal parts of yellow wax, diachylon, shoemakers' wax, and resin. It is introduced into the urethra, as far as the contracted point, against which it is pressed for a few moments. The plaster material, softened by the heat of the canal, moulds itself, sinks into the front of the stricture, and penetrates its cavity. When the bougie is withdrawn, it presents at its extremity an irregularly rounded mass, surmounted by a small appendage of variable length and size. Ducamp attached great importance to the position of this appendage, which should indicate to a certainty whether the opening of the stricture occupied the centre of the urethra, or if it approached one of its sides. He strangely deceived himself. When the modelling wax encounters the obstacle formed by the stricture, it commences by subsiding in front of it, and inclines to the side where it finds the least resistance. This is what happens, particularly at the commencement of the curve of the urethra, where the form and softness of the walls of the canal, joined to the direction imparted to the bougie, causes the plaster mass to enter the *cul-de-sac* of the bulb, and to be depressed backwards. Upon the model we obtain, the appendage is situated on the front of the mass of wax, and might lead to the supposition that the orifice of the stricture is very near the superior wall of the canal, whilst in reality it occupies its centre." . . . "Exploration of the urethra, with these bougies, is very badly supported by patients. The pressure required to be exercised upon the stricture to cause the wax to enter its cavity is painful, and sometimes causes a slight discharge of blood. The *debris* of the wax has been sometimes seen to remain in the stricture and to arrest, for several hours, the discharge of urine."

Speaking of the *bougies à boule*, he says:—"These bougies are of gum elastic, and end in a small cone. Their great flexibility





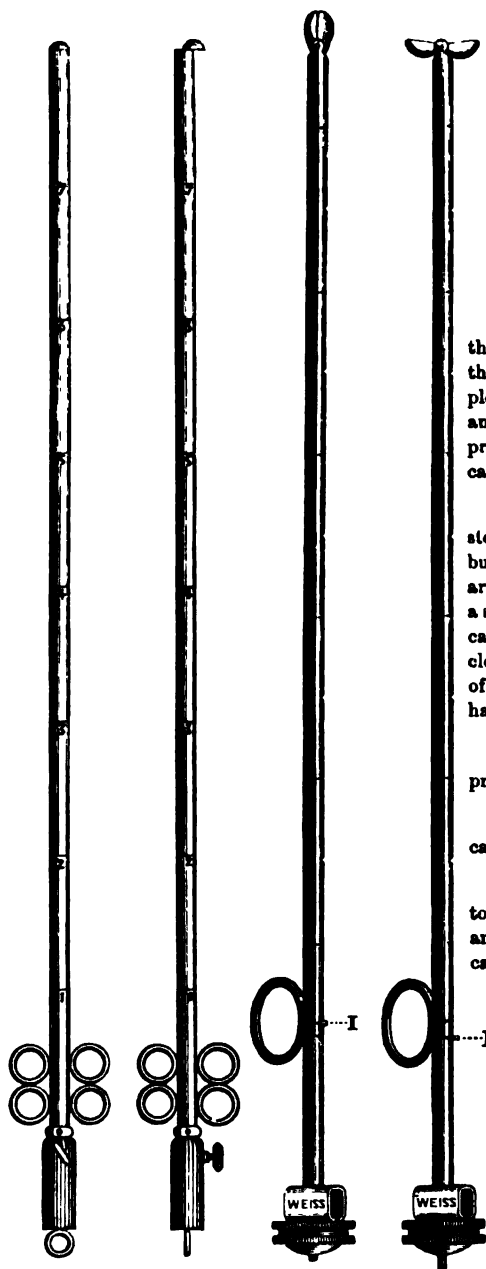


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Figs. 1 and 2.—Amussat's urethral explorer, showing (Fig. 1) the extremity of the canula completely closed by the lenticula; and (Fig. 2) showing the lenticula projecting at right angles to the canula.

Figs. 3 and 4.—The writer's steel bulbed urethral sound, the bulb being formed of half bulbs articulated with the extremity of a stylet which plays in a graduated canula. The half bulbs are either closed or divaricated by means of the milled screw-nut at the handle end of the sound.

Fig. 3.—Half bulbs closely approximated.

Fig. 4.—Half bulbs fully divaricated.

I. Index point firmly attached to the stylet. The point plays in an oblong space cut for it in the canula.

asily permits them to accommodate themselves to the curves of the urethra. When they are too thin some resistance may be given to them by passing a stylet into their cavity. We introduce them into the canal as an ordinary bougie. The cone, penetrating the stricture with its point, dilates it and traverses it without difficulty, whilst, at the moment that we withdraw the bougie, the base of the cone is arrested by the same obstacle which had been easily cleared. This instrument should be employed with prudence."

I believe it to be a deceptive urethral explorer. If, for instance, after having been passed, even through the healthy urethra, to the bladder, it is then gradually withdrawn, the bulb will frequently follow the stem by a series of jumps or jerks, and may thereby lead to the supposition of the presence of a stricture when none exists.

Voillemier goes on to say that:—"The stylets of Charles Bell have not been employed for a long time. The spherical bulb at their end, and the rigidity of their metallic stem, have caused their abandonment. But I should mention them, for they have been the parents of the gum-elastic *bougies à boule*."

The stricture sound made for me by the Messrs. Weiss (Figs. 3 and 4), although different in its construction, is formed upon the principle of Amussat's sound for examining a stricture from behind forward, with the view to ascertain its exact length. Amussat's instrument, Voillemier tells us, was in great vogue for some years, and was probably abandoned for the reason he mentions—namely, that the least fold of mucous membrane suffices to arrest the little half bulb or lenticula, when it is protruded and at right angles to the canula.

Amussat's instrument (Figs. 1 and 2) consists of:—"1. A silver canula, the walls of which are thicker at one side than at the other, in order that its cavity may be situated laterally; 2. A stylet, having at its extremity, and at a point of its circumference, a lenticula soldered. Owing to this arrangement, the lenticula, which is of the same diameter as the canula, exactly covers its extremity; but if a slight rotatory movement be imparted to the stylet, the lenticula projects beyond the canula at one of its sides, and forms a sort of graver."

I am not surprised that this urethral explorer fell into desuetude,

because:—1. There being but one lenticula; and, 2. Its flat surface having been placed so as to look towards the handle of the instrument. This position renders it, when at right angles to the canula, in every sense of the word, what Voillemier calls it, a graver, or more properly a scraper, and would no doubt cause it to catch in a fold of the mucous membrane and lead to deception. In fact, it should have been soldered to the stylet with the positions of its surfaces the reverse of those in which they have been placed by Amussat, but this would not be suitable in an instrument constructed like it.

In my sound (Figs. 3 and 4) it is not necessary, when in use, to separate the half bulbs so completely from one another that each shall form a right angle with the canula. Even when they are fully divaricated, there is but little, if any, risk of their hitching in a fold of mucous membrane, owing to their bevelled surfaces being placed so as to face the stricture.

The flexible *bougies à boule*, which, for ordinary exploration, I agree with those who advocate their use, to be preferable to metallic sounds, are not, I have already mentioned, altogether free from leading to fallacious observation. Voillemier, who speaks favourably of them, says that "when handled with precaution, they furnish some useful particulars. After having passed into the bladder a bougie, the bulb of which is in relation with the narrowness of the canal, we ascertain, on withdrawing it gently, one or several jerks, which indicate so many contracted points of the urethra. If, after having experienced resistance, the bulb traverses a long space before again becoming free, we thus appreciate the length of the stricture. But this appreciation is never anything but approximative. In effect, the bulb is arrested only in the narrowest part of the stricture, and should this have the form of an hour-glass, it will indicate neither the point where the stricture commences nor that where it ends. Thus exploration with the *bougie à boule* leads to the supposition that strictures are much shorter than they are in reality." . . . "These bougies, having always a certain volume, cannot be employed in cases in which the stricture is very narrow. Their introduction into the urethra is very easy, because of the slightly conical form of the bulb; but, when we withdraw them, the base of the cone, when it encounters the stricture, causes a little pain, and very often a slight discharge of blood. It is therefore necessary not to employ violence in order to pass these bougies into the canal, and to select

one the bulb of which is so proportioned to the stricture that it clears it easily."

"Although the *bougies à boule* have some inconveniences, and can furnish only incomplete information upon the state of the urethra, they still remain the best instrument that we possess for exploring the urethra."

"For cases in which we have reason to think that the obstacle occupies only a part of the circumference of the urethra," Voilemier uses "a bougie terminating in a half cone cut lengthways. We turn it between the fingers so as to place successively all sides of the canal in relation with the hip (*arête*) of the bulb, and it is easy to ascertain the wall upon which the stricture is seated."

"Whatever may be the instrument we use, and with whatever skill it is handled, we can only have approximative information upon the disposition of a stricture. The variable length of the penis, its elasticity which causes it to yield to the stretching exercised by the hand of the surgeon upon it, at the moment when he introduces an instrument into the urethra, opposes precision as to the seat of the obstacle. It is useless to graduate instruments for measuring, if the part to be measured varies in length at every exploration."

Notwithstanding the objections that have been advanced against the use of metallic stricture sounds, I believe that Bell's spherical bulbed metallic sounds, if used with care, will cause but little irritation. Although urethral exploring instruments, as Voilemier mentions, are only capable of affording approximative information, still, Bell's spherical bulbed sound, when precaution is taken to stretch the penis as little as possible, will enable us to ascertain with almost unerring precision the distance of the anterior extremity of a stricture from the orifice of the meatus.

I may here observe that the value of the flexible *bougie à boule* for exploring the straight portion of the urethra has been recently called in question by Dr. F. N. Otis, in a paper which appeared in the *New York Medical Journal* for March, 1873. For the straight portion of the urethra, he prefers "the metallic olive-shaped sound; for the curved portion, the olive-shaped gum bougies."

Dr. Otis has invented and illustrated an olive-shaped sound, having a small flexible shaft passing through a perforated handle,

"to which a thumb-screw is attached for fixing it at any desired point."

He states that, in his hands, it is superior to sounds of any other form or material in use for examination of the straight portion of the urethra, on account of the complete ease of its introduction and withdrawal, and of the exactness with which it defines and measures every degree of stricture.

As the bulb of these single bulbed bougies, however, must be either about or a little under the calibre of the stricture, that it may clear it either from before backward or behind forward, but little reliance can be placed upon them for accurate measuring of the length of a stricture; because, in their retrograde movement, the posterior portion of the bulb may re-enter the stricture while passing in the direction of the anterior meatus, and thus may not impart to the fingers any feeling of decided stricture resistance until it has proceeded for a greater or less distance through the coarctation.

For the avoidance of this source of fallacy, I have invented the bulbed urethral sound, represented in Figs. 3 and 4, for exploring a stricture in either direction, but chiefly from behind forward, with the object of insuring accuracy in the extent of incision made with the urethrotome, particularly with the urethrotome that cuts from behind forward.

The surgeon having for his object in urethrotomy, the subjugation of strictures which have been found to be either unamenable to ordinary treatment or unsuited for divulsion with mechanical dilators, the bulb may be relatively large, which is a desideratum as regards the strength of the instrument. In fact, it might be made as large as the sheath of Civiale's or of Chaumond's urethrotome. But this is not necessary, as a smaller sized sound can be made sufficiently strong for safe use. The size of the bulb in Figs. 3 and 4, when its halves are in close apposition, is No. 6 of Weiss's gauge, and when they are fully divaricated, their longest diameter equals No. 13 of the same gauge. This length of diameter suffices for ensuring very accurate information as to the exact position of the posterior extremity of a stricture, which it is particularly important to know, if, as some surgeons think, the incision in urethrotomy should slightly exceed in length the length of the stricture.

The sound (Figs. 3 and 4) is used in the following manner in sounding from behind forward:—Pass the instrument through the stricture until its ring handle reaches the anterior meatus. Then

gradually divaricate the half bulbs by rotating the milled nut. The amount of divarication may be ascertained by observing the movement of the index point I (Figs. 3 and 4), attached to the stylet that plays in the canula, and to which the half bulbs are connected.

When the half bulbs are sufficiently divaricated, the sound should be gradually withdrawn until they encounter the stricture. The length of canula in the urethra will represent the distance of the posterior termination of the stricture from the anterior meatus; and the canula being graduated, enables this to be ascertained with great precision.

For withdrawal of the sound, reverse the action of the milled nut, by which the half bulbs will be approximated.

To ascertain the distance of the front of the stricture from the anterior meatus, use the sound before the stricture has been made larger than its bulb; but an ordinary *bougie à boule*, having a full-sized bulb, or a Bell's sound, would probably be a better instrument for the purpose.

It would be quite possible to enlarge a stricture to No. 13 (Weiss's gauge) by a modified gradual dilatation from behind forward with my new sound, after the stricture has been sufficiently dilated by the ordinary bougie to allow of the passage of its bulb.

To effect this object, divaricate the half bulbs at each *séance*, until the long diameter of the space between their free ends is equivalent to the diameter of the gauge of catheter it is intended to represent. On withdrawing the half bulbs through the stricture, the required dilatation will be effected.

In this way, by slightly increasing the amount of divarication for each succeeding *séance*, a stricture can be gradually dilated from behind forward.

It is almost needless to observe that an instrument having a larger bulb than that of the sound represented in Figs. 3 and 4, would be required for the full amount of this modified gradual dilatation from behind forward.

**ART. XX.**—*On Limiting the Motion of the Chest in certain Lung Affections.* By JOHN M'CREA, M.A., M.D.; Senior Medical Officer to the Belfast Dispensary.

CONSIDERING how much value is attached to rest in the treatment of diseases of many other organs, it seems strange that no attempt is usually made to follow out this line of management in diseases of the lung. On the contrary, in certain affections of this organ, it is not unusual to advise an increase of exercise, and persons who are considered to have a tendency to phthisis are not infrequently put through a course of athletics intended to "develope" the chest. This has been sufficiently condemned by high professional authority, but the application of the principle of rest has stopped here. The attempt has not been made to moderate the ordinary and apparently necessary movements of respiration. And yet, I think the injurious effect of constant motion, rendered even more frequent than natural by the disease, must be admitted. From this point of view I would say a word in passing in favour of the use of anodyne cough medicines, which, in promoting rest of the organ, have a utility beyond the mere allaying of the patient's discomfort, important though that object be.

I have thought it most feasible to attempt the moderation of movement in limited local affections of small portions of the lung, such as we meet with in phthisis. It appears from all we know reasonable to believe that the healthy masses of lung would be able, without inconvenience and by a slight increase of activity, to compensate for any diminution or cessation of function that we might be able to induce in the diseased portion.

For the purpose of modifying the lung motion, hernial trusses, bandages, weights, and special apparatus of various kinds suggested themselves, and were found, for various reasons, unsuitable. The greater number of my cases were observed in the Belfast Dispensary, and I had, therefore, no control over the patients, except on the occasion of their visits to me. Popularity and the absence of irksomeness were, in these circumstances, most important desiderata in whatever mechanism I might adopt. I finally settled down to the use of the old-fashioned and popular emplastrum roborans. This was applied to the chest in various ways, according to the seat of the disease.

In affections of the apex I apply it in the following manner:—Two strips of plaster, two to three inches broad, are required; one may be called the vertical, and the other the horizontal strip. The vertical one is intended to pass up the front of the chest, over the clavicle, and down the back; the horizontal one to pass under the axilla, going two or three inches beyond the sternum in front, and the spine behind. The vertical is applied first, and is of such a length that its ends reach below the lower edge of the horizontal plaster. Before the application the patient is told to make a forced expiration, and the plaster should be well warmed, and ready to put on the moment he has emptied his lungs. He is directed to limit his breathing, and make no motion of his arm for a few minutes after the application, in order that the plasters may have time to harden.

This method of treatment, of course, interferes with stethoscopic examination. But we have the general symptoms, and, above all, we have the thermometer by which to gauge the progress of the case. At first I was quite unprepared for the feeling of comfort which patients so treated experience at once. This feeling they lose when the plasters grow slack, and my patients constantly return to ask me to put on the plasters new and tight. A firm application almost always diminishes the cough, and this even in cases where not much further good effect can be expected from them.

The observations now presented are founded on cases which were treated in 1871 and 1872, none of my more recent cases being here alluded to. I have, therefore, applied to the method the test of time to a tolerably fair extent.

The following case exhibits speedy recovery after one application:—

James B., a labourer, aged twenty, was first seen on May 22nd, 1871. Fine crepitation was audible over about the area of a crown-piece in the lower part of the right infra-axillary region. There was a sharp pain in the same neighbourhood since the day before. Temperature  $101^{\circ}\cdot1$  F. A strip of plaster was passed completely around the body at the level of the affected spot, and after expiration. He was ordered mint water.

May 24.—Pain gone; temperature  $100^{\circ}$  F.

May 28.—Temperature  $97^{\circ}\cdot8$ . The plaster was taken off. No abnormal sound was audible. At the beginning of the present year he informed that he had been in good health ever since.



As complete, but not so rapid, improvement occurred in the following case:—

Ellen Q., first seen November 27, 1872, aged forty-five, housewife. Two of her children have died of phthisis. She has not menstruated for seven years. She has had a hacking cough for the past week, and hæmoptysis for the last three days. Fine crepitation at left apex. Temperature  $98^{\circ}8$  F. Plaster was applied in the manner described above.

November 30.—Temperature  $98^{\circ}4$  F. Cough much less, but still annoying at night. She was ordered a mixture, in which she got four minims of the liquor morphiæ hydrochloratis every three hours. Quinine also ordered. Plasters renewed.

December 4.—No hæmoptysis since November 30, but cough not much better. Plasters renewed. Two minims of prussic acid added to each dose of anodyne mixture.

December 11.—Much better. Temperature  $98^{\circ}2$ . Plasters renewed.

December 17.—Cough gone. Temperature  $98^{\circ}$  F. She had, of her own accord, removed the plasters, and cleaned off the plaster material from the chest, so that I was able to make a physical examination. I could detect neither crepitation, nor anything else abnormal. Her general health is completely restored. I am in the habit of seeing her frequently. She has had no illness since.

In the next case repeated attacks appeared to be amenable to treatment.

Eliza S., first seen March 17, 1871, mill-worker, aged twenty; two months in bad health; emaciation; anæmia; scanty menses; for two days hæmoptysis; temperature  $102^{\circ}2$  F.; crepitus at right apex slight, but distinct. She was ordered a cough mixture, containing nitro-hydrochloric acid and morphia; tincture of the perchloride of iron was also prescribed. The plasters were applied.

March 19.—Cough and hæmoptysis have ceased; the plasters are still firm; temperature  $101^{\circ}6$  F.; to take cod-liver oil and quinine, with iron; former mixtures stopped.

March 28.—The plasters being loose were removed; no abnormal physical sign to be detected; temperature  $98^{\circ}2$  F.; appetite good. She is anxious to return to work.

She came back, on May 29, with cough and loss of appetite.

Temperature 99° F.; pain below right clavicle. I could detect nothing abnormal by either percussion or auscultation. She was strapped, and ordered quinine and an anodyne cough mixture. I did not see her again till October, when she came to consult me about amenorrhœa. She informed me that she had been working regularly, and that her health had been excellent from her visit to me in May; but that her menses had been very slight at the last two periods. There was no indication whatever of chest affection. Temperature 98° F. I prescribed for her tincture of the perchloride of iron. I heard nothing more of her for a year.

October 24, 1872.—She now reports that, with the exception of occasional menstrual derangement, she has had fair health ever since till quite recently. She has been following her occupation regularly. There is now crepitus at right apex; she complains of cough and bad appetite; temperature 100°·3 F. She was strapped.

October 25.—Temperature 99° F.

October 26.—Cough better, but giving annoyance in the morning. She got an anodyne cough mixture and quinine. I have not seen her since, but I ascertained, on inquiry at her residence in January, 1873, that she was in good health and at work.

The next case came under notice at an advanced stage, but the plasters gave great comfort, soothed the cough, and lessened the speed of the disease.

Eliza R., first seen August 12, 1872, mill-worker, aged forty-five; her father died from the effects of a kick of a horse; her mother died of fever; a sister died of consumption; she is tall, lean, and fallow; she has hæmorrhoids; the temperature all through fluctuated between 97° and 98° F., without any apparent connexion with the other symptoms; there are below the left clavicle coarse crepitation and dulness on percussion; straps applied.

October 30.—Moist sounds almost gone; dulness on percussion; some falling in of the upper part of the chest.

December 24.—Cough very much less. Since then both general health and chest symptoms have had a fluctuating career. She is a devotee of the plasters, and speaks in the strongest terms of the relief which she obtains from them as long as they are firm. She prefers to have them put on by me, but always keeps a supply at-home ready for an emergency.

In the following almost moribund patient the plasters quieted the cough:—

I saw Mary C. on March 4, 1872. She had a cavity in the upper part of the left lung, profuse night sweats, and diarrhoea. Having failed by other means to allay the cough, I applied the plasters. She thought they gave the greatest ease. She died on April 20, after an illness of four months.

The cases above cited may be taken as examples of the various species of affections which I had treated in this way up to the beginning of the present year; of twenty-one of these I kept a record. Besides there were many others, to which, after I had acquired confidence in the method, I applied the treatment as a matter of routine, and of which I preserved no records sufficient for publication. In several of these latter I have had from time to time casual opportunities of obtaining information.

In no case, and even this is an important consideration, did the treatment either appear to act injuriously or to give discomfort. In all cases relief, at least, was obtained. Those that were seen in an early stage appeared, without exception, to have the progress of the disease arrested. I think, therefore, especially considering that this was a first attempt, the method of treatment deserves further trial. I would especially commend its adoption for the earlier stages of phthisis, and on reading over my paper I cannot help thinking that I have not done justice to the fine results which I have witnessed in such cases. Lest I should be misunderstood, I think it right to say that I do not propose this as a substitute for other remedies of well-established efficacy. In this I should be as unreasonable as a surgeon, who, in treating a diseased joint, would trust to his apparatus, and neglect all other treatment.

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ART. XXI.—*Cases in Practice:—Epistaxis Successfully Treated in Two bad Cases by a Simple Procedure.* By WILLIAM WAUGH LEEPER, M.D., Loughgall.

A FEW weeks ago I was in attendance upon a man in typhoid fever. The case pursued the usual course. On the fifteenth day there occurred profuse perspiration with abatement of all the grave symptoms; but, on the night of the sixteenth day of the disease, some bleeding occurred from the nose. It was a mere trickle at

first, but after the patient slept a second time the hæmorrhage increased to such an extent that I was sent for. On my arrival, after a drive of four miles, I found the man cold and almost pulseless, with a constant effort at vomiting. The blood was slowly oozing from each nostril, and when he coughed or made an effort to speak, he spat up the same dark blood. The idea of plugging the nostrils occurred to me, but the operation seemed fraught with great danger, in the case of one in almost a dying state from exhaustion; so I thought of trying a remedy of easy application. I pushed up into each nostril two medicated bougies or suppositories of perchloride of iron. These I happened to have with me; they had been made (of double the usual strength) with two grains in each. I had them made by Duncan & Flockart, of Edinburgh, for another purpose altogether, *i.e.*, to push up into the uterus. I pushed two *up together*, and placed a bit of dry lint on the anterior nares. The effect was a present cessation of the bleeding, and I prescribed five grains of ergot, reduced to powder, every four hours. The result was successful for two days; when again in the middle of the night, the bleeding returned. The same remedy was again used, and with the same happy result, and after that there was no return, and the man made a good and perfect recovery.

CASE II.—About ten days after this case I was called to visit an old man (aged seventy-two), suffering from epistaxis, which every remedy had failed to check. This hæmorrhage also occurred in the middle of the night. When I reached the man's residence the bleeding had been going on for several hours. The old man was pale, face covered with cold sweat, and he had *frequently* vomited up blood. A stream of blood flowed from each nostril, and on looking into his fauces a similar stream seemed to flow down to the stomach, which accounted for the vomiting of such a quantity of blood.

I prescribed the ergot, this time the liquid extract of B. Ph. in scruple doses every four hours, and applied, precisely in the same way, the perchloride of iron bougies or suppositories. The result was the same as in the preceding case—*viz.*, almost the immediate cessation of the hæmorrhage, and in this case there was no return of it.

I have recorded these two cases simply because of the simplicity of the remedy used. These pencils soon melt, and the iron gradually comes in contact with the bleeding surface, and instantly its styptic effect is produced. The remedy is easy of application—

much more so than plugging, and was in these cases more effectual than injecting the nares with the same remedy in a fluid form—a mode which I have occasionally tried. I attach great importance to the internal use of ergot in all hæmorrhages, and hence I prescribed it in these cases. In hæmoptysis, and in certain hæmorrhages from the uterus, I have found the sub-cutaneous injection of ext. erg., dissolved in glycerine, the most effectual and the promptest remedy.

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ART. XXII.—*A Sphygmographic Chart, containing a Photographic Representation of the Pulse, as indicated by the Sphygmograph daily.* By H. MACNAUGHTON JONES, M.D., M.Ch., F.R.C.S.I., F.R.C.S.E.; Extraordinary Physician, Cork Fever Hospital; Senior Demonstrator of Anatomy, Queen's College, Cork, &c.

THE importance of the temperature chart, both in hospital and private practice, containing, as it does, the daily register of the secretions, respiration, temperature, and states of disease, &c., in several acute diseases, has become so apparent as to cause a general employment of this most correct and perfect indicator of a patient's progress. It occurred to me that, if a chart were struck off which would accompany this in the sick room or ward, containing the daily sphygmographic tracings, or "sphygmograms," of the pulse, it would be of great advantage. Accordingly, I had, at the Cork Fever Hospital, the accompanying chart, drawn out by my friend, Dr. G. Purcell Arkins, the resident medical officer (to whose mechanical ingenuity I owe the following plan for obtaining a correct daily *photograph* of the sphygmograph tracing of the patient's pulse). His plan is as follows:—"The strip of glass, with its thin film of lamp black, after receiving the sphygmographic outline, is varnished with the ordinary photographic negative varnish. The previously perishable film becomes hard and capable of being touched without danger. The strip is then treated as an ordinary photographic negative, and ANY NUMBER of photographic positives can be obtained by means of sensitive albuminized paper." A frame can easily be obtained, in which can be printed from six to twelve impressions at the same time. I enclose, for the sake of illustration, a copy of the chart, containing two sphygmographic tracings photographed, one of a normal (No. 1), and the other of an abnormal (No. 2), pulse. These photographs are, of course, to be read from right to left; by reversing the direction in which the plate



**No. 1.**

*Name*

*Age*

**OBSERVATIONS**

**DAY OF  
MONTH**

**DAY OF  
DISEASE**

**SPHYGMOGRAPH**

No. 1.—Health.



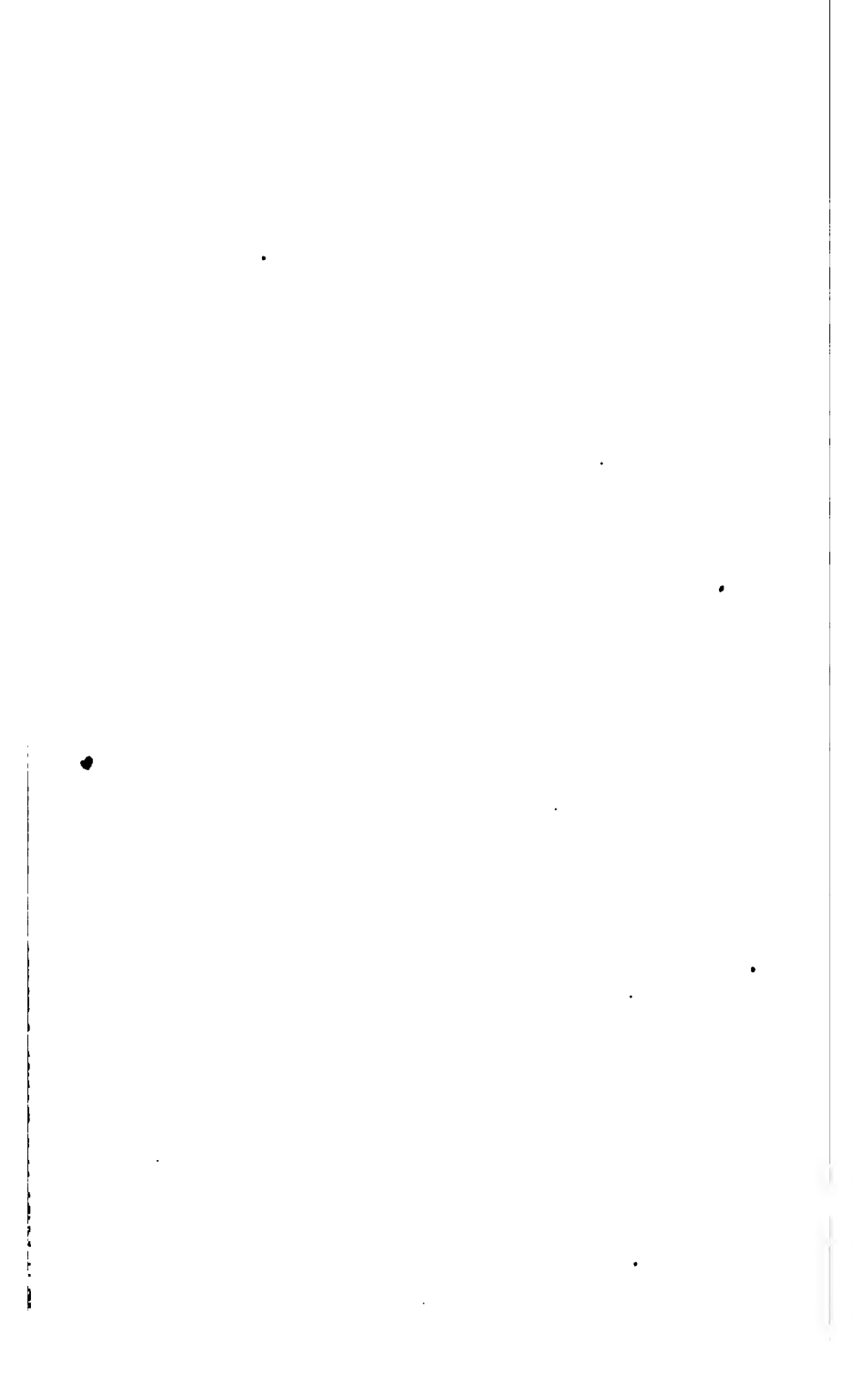
No. 2.—Pulse of a Patient in Typhoid Fever.



<i>sease</i>		<i>Date</i>	
OBSERVATIONS	DAY OF MONTH	DAY OF DISEASE	SPHYGMOGRAM

trature Chart.







**No. 2.**

# CHART FOR TABULATION

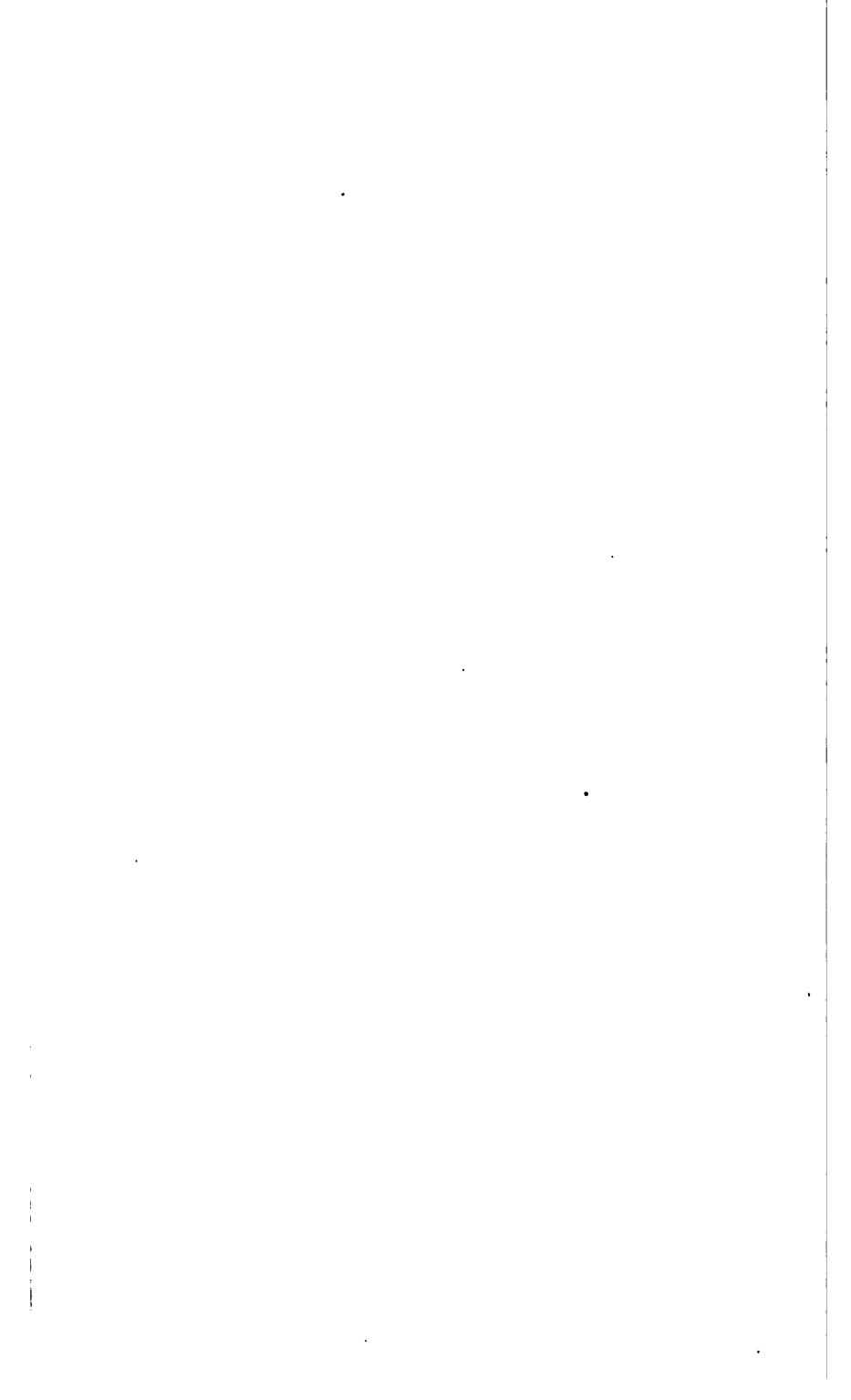
*Name, HAN. REYNOLDS; Age, 22; Disease, Relapsing*

OBSERVATIONS, &c.	DAY OF MONTH	DAY OF DISEASE	SPHYGMOGRAM
Unwell for 6 days before admission; had made "too free" after recovery from fever outside.	Oct. 1	11	
Pregnant 6 months; 2nd Pregnancy.			
On admission—foolish, delirious at times, careless of the child, suspicious. Temp'ture, 101°2. Pulse, 124—feeble. Resp., 36.	2	12	
Extremely ill for several days; great difficulty in hearing; foetal pulsation; dislike to speak or take food.	3	13	
	4	14	
	5	15	
	6	16	
DATE OF DISCHARGE (At present in Hospital.)	7	17	
RESULT			

# PHOTOGRAPHIC SPHYGMOGRAMS

*Fever ; Date of Admission, September 25th, 1873.*

OBSERVATIONS, &c.	DAY OF MONTH	DAY OF DISEASE	SPHYGMOGRAM
<p>day (9th) Pulse, 120. Temp. 0. Resp. 32.</p>	Oct. 8	18	
	9	19	
	10	20	
	11	21	
	12	22	
	13	23	
<p>day (14th) Pulse, 100. Temp. 98.2. Resp. 30.</p>	14	24	



of glass moves, through an alteration in the clock-work, the tracing would appear as in ordinary readings. In the recording of cases of unusual interest, the application of this principle is of great importance, as it enables any ordinary person to reproduce as many daily sphygmographic tracings as he may choose for publication, or otherwise, at little expense. These can be delineated in a chart suspended side by side with that representing the temperature, thus affording the most complete record of the progress or variation of the disease. I am not aware that any proposal has as yet been made to avail of the photographic process as a supplement to the sphygmograph; and, hence, I venture to draw attention to such an infallible and simple method of perpetuating the pulse tracing.

Chart No. 2 contains the tracings of a patient not yet discharged from hospital, with the sphygmograms as taken daily, and is added merely to illustrate the method as exemplified in her particular instance. She was a case of low fever occurring during the sixth month of pregnancy, and coming on as a relapse after a severe attack which she had had outside. It was almost impossible to detect for some days the foetal pulsations, and for the first week of admission the movements of the child were almost imperceptible; nor was any statement of her's to be relied on. There was no vomiting, but at times she was delirious. The tracings show the extremely feeble pulse which she had at the commencement of the illness. She is now convalescent, and the child alive and apparently strong.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*A Treatise on Rheumatic Gout, or Chronic Rheumatic Arthritis of all the Joints.* By ROBERT ADAMS, M.D., A.M., M.Ch. M.R.I.A.; Ex-President of the Royal College of Surgeons in Ireland, and of the Pathological Society; Surgeon to the Richmond, Whitworth, and Hardwicke Government Hospitals. Dublin; Surgeon to Her Majesty the Queen; Regius Professor of Surgery in the University of Dublin; Member of the Society of Surgery, Paris. Illustrated by woodcuts and an atlas of plates. Second edition. London: John Churchill & Sons. New Burlington-street. Dublin: Fannin & Co., Grafton-street. Edinburgh: Maclachlan & Stewart. 1873. 8vo., pp. 568.

THIS great work, which is destined to prove a monument more lasting than marble, of one of the most eminent surgeons and pathologists which the Irish School of Medicine can boast of, appeared this year in a second edition. The first edition, which appeared in 1857, was reviewed at length in the twenty-fifth volume of the *Dublin Quarterly Journal of Medical Science*, p. 72. The present edition exceeds the former one in size by more than two hundred pages. Although the author's continued study as to the morbid anatomy of the disease of which he treats has not enabled him to add to the descriptions and delineations already given, he has, in this edition, increased the number of wood-engravings, with a view to make us more familiar with the variety of the external forms the disease imposes on the parts it affects. A chapter on *Bursal Tumours*, symptomatic of rheumatic gout, followed by an account of simple bursal tumours not symptomatic of any special disease, has been introduced, and questions as to the comparative value of a variety of modes of treatment have been discussed. He is ready to admit that, after all, the great desideratum at present required of us is to answer the question—What is the best method of treating chronic rheumatic arthritis? To this question he replies that it must be confessed he cannot give as satisfactory an answer as we





walk without lameness, and to play on her favourite instruments with her usual unexampled skill and execution.

With the high-bred courtesy and tender consideration which has always characterized the author of this work, he specially acknowledges, in the Preface, the obligations he has been under to many of the resident pupils of the Richmond Hospital, who attended to the cases under his care during his necessary absence. The intrinsic merit of this monograph is such that it can neither be increased or diminished by the criticism of a reviewer, but we cannot forbear from saying that, being, as it is, the result of close observation, long reflection, unwearied pathological diligence, and mature judgment, it will keep its place for ever among the master-pieces of the chiefs of Irish Medicine, and with it will be for ever associated, in honoured reverence, the name of Robert Adams.

The woodcuts have been executed, as to the first half of the volume, by Mr. Hanlon, and the remainder by Mr. Oldham, and do credit to the established character for skill of these artists. The lithographic drawings, which speak for themselves, have been printed by the late firm of Hullmandel & Walton, of London; they have been drawn from nature by Mr. Conolly, so well known in this city for his faithful delineations of disease, and whose premature loss the Medical School of Dublin has so sadly to deplore.

## PART III.

### HALF-YEARLY REPORTS.

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#### REPORT ON MEDICINE.\*

By JAMES CUMING, M.A., M.D.; Professor of Theory and Practice of Medicine, Queen's College, Belfast; Physician of the Belfast General Hospital.

##### TREATMENT OF ACUTE PNEUMONIA.

THIS subject has been treated very fully by Professor Lebert<sup>b</sup> and by Jürgensen.<sup>c</sup>

Lebert states, as the result of his own observation, that venesection and tartar emetic moderate the febrile condition by diminishing the lateral pressure in the vascular system—tartar emetic possessing the advantage of not depriving the system of blood. On the other hand, neither of them has any power to cut short pneumonia, or to interfere with its development, and are not to be regarded as direct antipyretics. The usually short duration of the febrile symptoms in pneumonia, the remissions which occur in its course, and the rapid fall of temperature about the end of the first week—all have a tendency to induce physicians to form exaggerated estimates of the value of therapeutic measures. By no method of treatment can the critical period be hastened by an hour.

With regard to digitalis, Lebert adopts Traube's view, that the distinct lowering of the pulse and temperature, brought about by its administration, is owing to its power of slowing the circulation through its influence on the vagus. He points out the risks of formidable depression which are incurred by its use in large doses. In moderate doses it gives some relief to the fever and dyspnoea.

Veratria is found not to give better results than those obtained by the expectant treatment.

Quinia is the best antipyretic, and can be given in full doses with much less risk of toxic effects than digitalis or veratrum. It produces, when given to the extent of 30 grains in the twenty-four

\* The author of this Report, anxious that every contribution to Pathology and Practical Medicine should be noticed, will be glad to receive any publications on these subjects. If sent to correspondents of the Journal they will be forwarded.

<sup>b</sup> *Berliner Klinische Wochenschrift*, 1871.

<sup>c</sup> *Volkman's Sammlung Klin. Vorträge*, No. 45.

hours, a sedative effect. The temperature is lowered and the pulse diminished in frequency, but, as had already been pointed out by Vogt, the pulmonary affection undergoes no diminution, and the diminution of the temperature is slight and transitory. In the form of pneumonia occurring in alcoholism and in typhoid pneumonia, a tranquillizing effect was produced on the nervous system by its administration.

Cold baths have not been tried by Lebert in a sufficient number of cases to enable him to speak definitely regarding their value. He found them powerful agents in diminishing fever, observed that they were well borne in the disease, and that even in cases of lung inflammation in connexion with alcoholism, rest was obtained by the patient under their influence. He regards them as powerful means of alleviating severe cases, but as not applicable to cases of pneumonia generally.

Nitrate of potash has, in Lebert's hands, produced such inconsiderable results that he has altogether ceased to employ it for some time, the more especially since it occasionally was found to produce unpleasant gastric symptoms.

Acetate of lead and chloroform inhalations have not been found to possess any real therapeutic value.

Brandy does good service in the disease when occurring in drunkards, but otherwise is not of general utility.

After a complete and searching critical examination of these different methods, Lebert proceeds to lay down the bases of the rational therapeutics of the disease. The patient ought to remain in bed, in a condition of quiet, with moderate warmth, and perspiration ought not to be encouraged. He ought to speak as little as possible, and drink neither too cold nor too hot fluids. In very weak patients, ether or small quantities of wine may be given with advantage. When the fever abates, seltzer water with milk may be given, and if the appetite is bad, bitters may be prescribed. In the absence of any definite indication, it is better not to administer any medicine.

Indications for venesection are—pulse full and hard, or small and resisting, with marked dyspnoea, and a cyanotic condition of the patient—all of which point to great embarrassment of the pulmonary circulation. If there be rapid spread of the inflammation, marked cerebral symptoms, and distension of the jugular veins, blood-letting is imperatively necessary. But this expedient is absolutely contra-indicated in secondary pneumonia, in the

typhoid form, in that arising in drunkards, and in epidemic or malarious forms of the disease.

When dyspnoea depends not on congestion of the lungs, but on excitability of the nerves, opium or quinia are to be administered. If opium check expectoration, then quinia is to be substituted, especially when disproportionately high fever and tendency to typhoid symptoms exist. If an antipyretic effect is not produced by the use of the quinia, then cold baths may be tried, especially in the typhoid and alcoholic forms of the disease. If local pain be considerable, cold applications may be made to the chest, or small doses of opium or Dover's powder may be exhibited. If the expectoration be not ejected, tartar emetic or ipecacuanha are to be administered; in tendency to collapse, ammonia, camphor, or benzoic acid may be prescribed; in profound nervous depression, stimulants and musk. He recommends 4 parts of musk with 2 parts of carbonate of ammonia in 60 parts of rectified spirit and 20 parts of distilled water with 4 drops of oil of peppermint. During convalescence no medicines are commonly required, and all that is necessary is to caution the patient against premature exertion, and to prescribe a proper dietary.

Jürgensen believes that the great danger to the patient in pneumonia is from insufficiency of the heart. This depends on the increased resistance in the pulmonary circulation, on the infiltration of the lung which lessens its power of assisting in the general circulation, and on the diminished superficies available for respiration, all of which lead to increased demands on the functional activity of the heart. On the other hand, the elevation of temperature which occurs in the disease increases the frequency of the pulse at the very time that the muscular structure of the heart is weakened. The pulse accordingly is the great guide to the treatment of the disease, just as in fever the axiom "*sine thermometro nulla therapia*" holds good; so in pneumonia "*sine pulsu nulla therapia*" is an important maxim. The most efficient method of preventing the enfeeblement of the heart consists, according to Jürgensen, in the withdrawal of heat from the body by cold baths as often as the temperature reaches 104°. The duration of the bath ought to be from 7 to 25 minutes, and with the old and weak tepid water may be used. Before the use of the bath a stimulant ought always to be administered on account of the increased effort which the bath entails on the heart for the time being.

In addition to the lowering of the temperature by the bath Jürgensen recommends the administration of quinia in doses amounting to 30 grains, dissolved in water by the aid of acid. This quantity is to be administered every second evening between 6 and 8 o'clock. There is no danger in even doubling this dose. He gives a nutritious diet, with a moderate amount of wine. Pain in the side and sleeplessness he treats by subcutaneous injections of morphia. Restlessness and delirium by chloral.

If, in spite of the treatment, cardiac weakness supervene, he gives stimulants freely, strong wines, champagne, spirits, camphor, or musk. During recovery he gives reduced iron and bark, and if absorption of the inflammatory products be delayed, he strongly recommends oil of turpentine, which is to be administered in doses of 12 drops, either in milk or in capsules six times daily. By this method Jürgensen has lost only 24 patients out of 200 who suffered from the disease.

#### PERIOD OF TIME NECESSARY FOR THE DEVELOPMENT OF THE AMYLOID OR WAXY DEGENERATION.

Professor Cohnheim,\* of Kiel, reports three *post-mortem* examinations in which extensive amyloid degeneration was found in young, previously healthy men, who died in consequence of injuries of bone received from gunshot wounds. There was no evidence of any disease antecedent to the injuries, nor was any trace discovered of scrofulous or tubercular disease, or of syphilis. Suppuration had occurred in all three for some time. In one of the cases the spleen only was diseased, in the others the spleen and kidneys. The period which elapsed from the time the injuries were received varied from four to six months, and as it is hardly possible that the amyloid disease should have begun till some time later than the reception of the injuries, this narrows the period in which well-marked evidence of this change may be produced to a very few months.

#### INVESTIGATIONS REGARDING CEREBRAL PATHOLOGY.

Great interest has been excited by the recent attempt to investigate and define the functions of the different parts of the cerebrum, to which a new impetus has been given by the observations of Fritsch and Hitzig,<sup>b</sup> and by an admirable paper by Ferrier,<sup>c</sup>

\* Virchow's Archiv., Bd., 54.

<sup>b</sup> Reichert and Dubois, Reymonds. Archiv. 1870.

<sup>c</sup> West Riding Lunatic Asylum Reports. Vol. III.

entitled "Experimental Researches in Cerebral Physiology and Pathology." Ferrier's researches, which were conducted in the pathological laboratory of the West Riding Lunatic Asylum, were undertaken for the purpose of examining how far the theories of Dr. Hughlings Jackson on epilepsy, chorea, and hemiplegia, were capable of experimental proof.

A number of results of great interest in connexion with the physiology of the brain were arrived at by Ferrier. Among others, the experiments indicated that there is ground for believing that the anterior portions of the cerebral hemispheres are the chief centres of voluntary motion, that the individual convolutions are distinct centres, and that the centres for the movements of the eyelids, face, mouth and tongue, ear, neck, hand, foot, and tail, are located in certain definite groups of convolutions. The bearing of those conclusions on the question of the localization of function in different parts of the cerebrum will be at once obvious.

A subject, however, of more immediate interest to physicians is the investigation of the nature of epileptic and other convulsions; of chorea and hysteria. It was found when a diffused irritation of the surface of the hemispheres was produced by applying the electrodes at such a distance from each other that the current had to travel from one end of the hemisphere to the other, that an epileptic convulsion was induced, and that this convulsion was usually, although not always, confined to the muscles of the side of the body opposite to that on which the cerebrum had been irritated. It was found, also, that partial convulsions could be produced by powerful stimulation of the centres for the motion of those muscles. In bringing about these results no direct mechanical injury was inflicted on the brain substance; the electrodes were simply applied to its surface. It was found that an excited and hyperæmic condition of the cortical substance of the hemispheres was the invariable antecedent of the convulsions.

Choreic movements of muscles were produced by the momentary application of the electrodes to the cortical substance of the centre corresponding to them.

These experiments are regarded by their author, as well as by Dr. Hughlings Jackson, as affording proof of the views of the pathology of epilepsy and chorea, which have been put forward by the latter physician. Dr. Hughlings Jackson believes that the nutrition of the nerve tissue, in cases of epilepsy and chorea, is altered. That while, as regards quantity of nutrition, the nerve

tissue is over-nourished, the quality of its nutrition is not normal. The nervous substance which is formed is more unstable than in health, and is explosive. He suggests that this alteration of composition may consist in the replacing of the phosphorus, which is a normal constituent of the brain, by its chemical congener, nitrogen. This abnormal nerve tissue is unstable, and discharges on slight provocation, engendering the familiar convulsive movements. The epileptic convulsion is accordingly a sudden, excessive, and rapid discharge of the nerve force stored up in the cerebral cells of particular portions of the grey matter of the brain, and Dr. Jackson believes that the starting point of this discharge is capable of being ascertained by noting the muscles first affected by the convulsions. There can be no doubt of the great credit which is due to Dr. Hughlings Jackson for his unwearied efforts to disentangle this intricate subject; and his contributions to the literature of the subject, which are very numerous, and scattered through many periodicals and works, are all stamped with original thought, and well deserve perusal.

#### **PATHOLOGY OF RIGIDITY OCCURRING IN PARALYZED LIMBS.**

A contribution of great interest by Hitzig,\* on the subject of "Some Anomalies of Muscular Innervation," contains several very ingenious observations on the subject of the causation of rigid contraction of muscles in paralyzed limbs. The contracted state of the limbs following an apoplectic attack was regarded by Todd, who has been followed in this by Duchenne, as an evidence of secondary irritation, arising around an apoplectic clot, and he drew the well-known distinction between early and late rigidity. Duchenne advised that Faradization should not be employed in this condition on account of its liability to produce a dangerous increase of the irritative or inflammatory symptoms; and he censures Remak sharply for recommending the use of electricity in these cases. Hitzig states that he has employed both Faradization and the continuous current in numerous cases of this kind without any of the results dreaded by Duchenne.

The opinion that the rigidity is the result of the normal predominance of the flexors over the extensors is not well founded. If this were sufficient, rigidity ought to be always an early symptom, and ought to be found in cases of paralysis of the radial nerve.

\* *Archiv für Psychiatric.* 1872.

Bouchard suggested that late rigidity depends on a secondary affection of the spinal cord, characterized by hyperplasia of the connective tissue.

Hitzig has observed that the contractions will disappear for a time after prolonged rest, especially after a good night's sleep; and that as long as the patient remains quietly in bed, the limbs continue relaxed and flexible. The fact of variation in the rigidity being of not unfrequent occurrence had been observed by many authors, but no one had previously noticed the dependence of the relaxation on rest. Getting out of bed, even changing the shirt, is, however, enough to induce the supervention of the rigid contraction. In fact rigidity and immobility again occur at the moment when any movement is attempted which requires an effort of will on the part of the patient.

After long persistence of the contraction the muscles and the articulations may become altered, so that the abnormal position may become permanent. The contractions are regarded by Hitzig as the expression of associated movements which are generated by abnormally powerful impulses of the will, acting on muscles which are now less susceptible of the normal voluntary impulse to action.

#### NATURE AND TREATMENT OF TREMOR.

Dr. Eulenburg\* is of opinion that, although tremulous movements of the voluntary muscles are met with in a number of very diverse pathological conditions, for example in paralysis agitans, diffuse cerebro-spinal sclerosis, alcoholism, lead and mercurial poisoning, and in advanced life (senile trembling), yet that there is reason to believe that in, at all events, the great majority of cases the immediate cause of this symptom is to be sought for in the spinal cord. A strong argument in favour of this view is furnished by the fact of the complete exemption of the facial muscles from tremor in many cases. The development of tremor depends either upon a marked excitability of the parts of the nervous system presiding over motion, or upon a morbid excitation of the same parts of either peripheral or cerebral origin. Two ways, accordingly, present themselves of dealing with tremor in an empirical manner; the one to diminish the excitability of the motor nervous apparatus, the other to lessen the excitations conveyed by the sensory channels to the nervous centres and thence to the motor nerves.

\* *Berliner Klinische Wochenschrift.* 1872. P. 553.



All attempts to carry out the former of these indications, by acting on the cerebral or peripheral parts of the motor nerves, by means of agents such as curara, which possess the property of paralyzing these nerves, have, in Eulenburg's hands, altogether failed.

It was different, however, with regard to the second indication. The experiments of Sklerak had gone to show that by the use of the potash and soda salts of arsenious acid, the portion of the spinal cord devoted to the conduction of sensation could be rendered incapable of performing its function, while the excitability of the motor nerves and of the muscles remained unchanged. Accordingly, Eulenburg has employed, with the best results, the hypodermic injection of arsenic to combat the symptom of tremor. Although this treatment has probably not much effect on the essential pathological condition in which the disease of the patient consists, yet very substantial benefit is derived by removing or even by merely diminishing a symptom which is in itself very distressing to the patient, and which is also calculated to render him in a great measure unfitted for the ordinary social relations of life.

The solution employed for the hypodermic injection consisted of Fowler's solution, to which double the quantity of distilled water was added. Of this a quantity, corresponding to from two to three minims, of Fowler's solution was injected. The neck or back beside the vertebral column was selected. No toxic effects were in any instance noticed, and no local inflammation or suppuration followed in any of the cases. The pain was observed to be much less than that produced by injecting morphia. The advantages of the hypodermic method consist in the rapid introduction into the circulation of a relatively considerable amount of arsenic, and a consequently more rapid and powerful effect on the nervous system. Another advantage consists in the avoidance of the gastric disturbance frequently engendered by the prolonged internal use of arsenic. Eulenburg has employed this treatment in seven cases, in some of which the results have been of the most brilliant character. The author states that this mode of employing arsenic was first practised by J. C. Lehmann, of Copenhagen, in a case of pernicious puerperal fever.

Dr. Fernet,\* in an elaborate essay on tremor, discusses at some length the origin of this phenomenon. Some regard it as a paralytic, others as a convulsive manifestation. Romberg said that

\* Thèses présentées au Concours d'Aggregation. 1872. Archives Générales. Novembre, 1872.

tremor was the bridge between the region of convulsions and that of paralysis.

Fernet brings forward a theory of tremor, and supports it by some new experiments. In order to arrive at any reliable results in this matter, it was necessary that it should first have been established that muscular contraction takes place by means of little jerking contractions, which succeed one another so rapidly that they coalesce, and that thus the general effect is that of one single, steady contraction.

In the case of those affected by tremor, however, the muscular contraction takes place by means of a series of these little jerking movements, which do not coalesce, but continue more or less independent.

MM. Marey, Brouardel, and Fernet, have made a number of experiments on healthy persons, and on those suffering from tremor. In the case of healthy persons, the trace yielded by the myograph, when muscular contraction occurred, was a straight line.

Exactly the same fact was noticed in M. Marey's physiological experiments, as well as by those of Volkmann. When contractions were artificially induced in muscles, at the rate of 27 per second, the myograph yielded a straight line, the muscle being thrown into a state of physiological tetanus. When contraction was induced at the rate of 20 per second, the oscillations almost coalesced; but when at the rate of 10 per second this took place only imperfectly.

In multiple sclerosis a slight muscular contraction yields a line with regular oscillations, which are of slight extent, and take place at the rate of only 3 per second. When the contraction is more energetic they take place at the rate of 5 per second.

In a word, the little jerks never completely coalesce, and the trace which the myograph yields in the case of those affected by tremor is exactly similar to that which we obtain when we induce contraction in the muscles, at the rate of only a few jerks per second.

Fernet's conclusions are—

(1.) The number of jerks indicated in tremor is always far below that necessary to produce tetanus (which is 32 per second).

(2.) The number of jerks is less in proportion as the oscillations in the line given by the myograph are more extensive. They are less numerous in sclerosis than in mercurial tremor, and less numerous in the latter than in lead poisoning.

(3.) The number of jerks in a given time in the case of any one

patient suffering from tremor, either do not vary at all, or vary slightly according to his state of rest or motion.

#### ON EMBOLISM.

This subject has been experimentally investigated with great care by Cohnheim, and in some important respects additional light has been thrown on it, although the conclusions of the author confirm, in a great measure, the opinions of Virchow. The organ selected by Cohnheim was the tongue of the curarised frog. He found that coagulation of the blood never took place round an embolus, even in moderately large vessels. When occlusion takes place in an end artery, as Cohnheim designates a vessel from which no collateral branch passes off beyond the site of the embolus, the blood is brought into a condition of absolute stasis, not only immediately behind the embolus, but in the capillaries and venous radicles which derive their blood from the occluded vessel, as far as a point where the veins are connected with other veins which still receive their normal blood-current. From this point a backward flow of blood, in the direction of the embolus, occurs, which leads to complete filling of the vascular tract in question with blood, after which a sort of oscillation in the blood becomes noticeable. This process of filling of the vessels is explicable by the diminished pressure existing in the vessels removed from the circulation permitting the blood to flow into them till the pressure becomes equalized.

The next step in the process consists in the passage of the red corpuscles of the blood forcibly through the walls of the capillaries, then through those of the smaller veins. In no instance was any migration of corpuscles observed through the walls of the larger veins or those of the arteries. This process leads to the well-known hæmorrhagic infarction. It is clear that this hæmorrhage cannot be explained by mere pressure; if for no other reason, because, as Cohnheim notices, it is the corpuscles of the blood, and not the plasma, that escape from the minute vessels. Accordingly, he was led to consider whether the cessation of the blood-current through the vessels might be the cause of such changes in their walls as would account for the occurrence of the hæmorrhage. This he has investigated by a number of well-devised experiments, and he has come to the conclusion that the hæmorrhage is to be referred to changes in the walls of the vessels. The evidence of this is, however, imperfect, as he never succeeded in detecting actual

changes in the vascular structures. As regards the results of embolism, three varieties of change were recognized—1. Organization of the embolus and subsequent incorporation of it with the wall of the vessel, without any injurious tissue change in the part affected; this occurs when a branch passes from the artery beyond the site of the embolus, and is found with greatest frequency in the lungs. 2. A form of necrosis may arise. And, 3. Hæmorrhage may occur.

In organs in which the “end arteries” occur, the second and third terminations will be frequent. These organs are the spleen, kidney, brain, retina, and, to a partial degree, the lungs. In the last-mentioned organs the collateral circulation becomes less complete the further we go from the hilus. In the other organs occlusion of a vessel is not usually followed by the unfavourable results above-mentioned, owing to the ease with which collateral circulation can be set up. Instances of this are frequent in the liver, and especially in the intestinal canal. Even in organs however, in which numerous anastomoses occur, emboli of an irritating or infecting nature are liable to give rise to abscesses.

#### DIAGNOSIS OF DIARRHŒA IN CHILDREN.

Professor Widerhofer\* gives a careful and detailed account of the symptoms and signs of the different abdominal diseases of children. The following tabular statement of the differential diagnosis of catarrhal diarrhœa, and that dependent on typhoid fever, will be found of interest:—

##### CATARRHAL.

Occurs up to four years of age, and in a sporadic form.

Severe at outset; copious and frequent evacuations; high fever, which, with the progress of the disease, rather diminishes, and which is in the beginning not accompanied by much muscular weakness.

##### TYPHOID.

Is most frequent after four years, usually during the prevalence of typhoid, and, when an epidemic is present, will even, though rarely, attack children in the first year of infancy.

Begins slowly, after previous feeling of malaise, with few and not remarkably copious evacuations; the fever which is not high, increases with the progress of the disease, and is accompanied from the outset with great muscular weakness.

\* *Jahrbuch für Kinderheilkunde*. December, 1872.

## CATARRHAL—continued.

The evacuations are even at first very liquid, and of a penetrating odour.

The abdomen is distended, this being especially marked in the epigastrium, and although sensitive to pressure, there is no specially tender region. Rumbling occurs without any cause.

The pulse was above 100 only during the exacerbation; the temperature does not rise to any marked degree; there is some appetite and great thirst.

Tongue moist, whitish in the middle.

Face not expressive of suffering, except during colicky attacks.

Urine much diminished, containing much urate of soda, but presenting no notable diminution of chlorides.

No splenic enlargement, unless this has been present before the intestinal disorder was set up, as is not unfrequently found in anæmic and rickety children.

No cutaneous eruption.

Bronchial catarrh a frequent complication.

Gradually progressing emaciation.

## TYPHOID—continued.

The evacuations are fecal, and the odour not remarkably offensive at outset.

The tension and soreness in the abdomen are found mainly in the cæcal region, in which pressure develops rumbling and gurgling.

Pulse commonly over 100, may rise to 120, 130, and even higher; skin very hot and dry; temperature 104° to 106°, with regular variations; appetite defective, even when thirst is present; patient does not ask much for drink.

Tongue dry and reddish, not so often with a brownish coating; aphthæ frequently present on its sides and on the buccal mucous membrane.

Countenance apathetic; forehead wrinkled.

Dense, scanty urine, with diminution of chlorides.

Splenic enlargement, which increases and diminishes with the fever.

Roseolar, papular, and erythematous eruptions; sudamina especially on the breast.

Bronchitis of more or less severity; rhonchus and rales in the bronchi, especially at the bifurcation of the trachea.

Loss of flesh, well-marked only at the decline of the fever and at the beginning of convalescence.

**CATARRHAL—continued.**

Duration two to four weeks; if relapses occur may continue for six or eight weeks.

**TYPHOID—continued.**

Duration usually three weeks, more rarely two weeks; till complete convalescence four to six weeks.

**ON THE TREATMENT OF EMPHYSEMA.**

Professor C. Gerhardt<sup>a</sup> states that the best means hitherto devised for the treatment of emphysema are very insufficient. The catarrhal condition, which so frequently accompanies it can be improved by inhalations of solutions of bicarbonate of soda, or by crebenthinates. The imperfectly aerated condition of the blood is best met by the inhalation of compressed air. The same volume of the denser air being inspired, a greater amount of oxygen is absorbed, and a larger quantity of carbonic acid is given off. Various attempts have been made to devise means to facilitate expiration. A method suggested by Berkart,<sup>b</sup> to effect this purpose, consists in adjusting an apparatus to the mouth and nose, from which a tube proceeds to a suction pump, which is worked with each expiration, so as to rarify the air. Gerhardt has adopted, with some advantage, an old method, consisting in making pressure, during expiration, on the chest-walls and on the abdomen. The results of this method are favourable in proportion to the youth of the patient and the flexibility of the cartilages of the ribs. It is very serviceable in cases in which some of the air-passages are blocked up by viscid secretion. While Gerhardt has found very advantageous results from this expedient, methodically applied, he has recognized two dangers in its application, neither of which has, however, had any untoward result. These are, firstly, hæmoptysis, which, no doubt, was the result of the increased pressure of the blood brought about by the external compression; and, secondly, that muscular twitching which was observed to supervene during the process.

**TREATMENT OF CATARRHAL JAUNDICE BY FARADIZATION  
OF THE GALL BLADDER.**

Gerhardt<sup>c</sup> has found the treatment of jaundice, from catarrh of the ducts, by Faradization of the gall bladder successful in a

<sup>a</sup> Berliner Klinische Wochenschrift. 1873. Pp. 25.

<sup>b</sup> The Lancet, Nov. 25, 1871. Pp. 745-746.

<sup>c</sup> Berliner Klinische Wochenschrift. July 6, 1873.

number of instances, and thinks it is analogous to the reduction of a hernia by the taxis. The position of the distended gall bladder can be made out by the touch; it is even sometimes visible, and percussion along the lower margin of the liver enables us to identify its position with ease. An electrode of a strong induction apparatus is placed on the organ and firmly pressed upon it in the direction of the posterior wall of the abdomen. The second electrode is suddenly applied to the opposite point of the posterior wall of the abdomen. This process is repeated in rapid succession. Occasionally the gall bladder becomes immediately apparently less, and bile will frequently re-appear in the stools within two days. It has been noticed that the renal nerves become stimulated by this application, and that during the succeeding days urine of a paler colour and lower specific gravity is voided. Sometimes it is necessary to repeat the application of the galvanism in consequence of the dulness corresponding to the distended gall bladder becoming again recognizable.

#### TREATMENT OF SYPHILIS BY SUB-CUTANEOUS INJECTIONS OF CORROSIVE SUBLIMATE.

Professor Lewin,\* of Berlin, has found that syphilis may be treated in this way with advantage, the duration of the treatment being shorter than usual, and the amount of the drug required being very small—not exceeding commonly two and a-half to three grains; eight hundred cases have been treated in this way with comparative advantage. The author does not advocate his method as useful in all cases of syphilis.—*New York Medical Journal*.

\* Lewin on the Treatment of Syphilis by Sub-Cutaneous Sublimate Injections. Translated by Proegler and Gale.—*New York Medical Journal*, April, 1873.

## HALF-YEARLY REPORT ON PUBLIC HEALTH.\*

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### NITROGEN COMPOUNDS IN RELATION TO WATER CONTAMINATION.

IN making an analysis of water for sanitary purposes, the following are the chief points to be determined:—1st. The total amount of solid matters contained in a gallon (70,000 grains), a liter, or in 100,000 parts of the water. 2nd. The amount of calcium sulphate (gypsum). 3rd. The amount of chlorine. 4th. The quantity of organic, or albuminoid nitrogen. 5th. The proportion of ammonia. 6th. The amount of nitrous acid. 7th. The quantity of nitric acid.

The dead organic matter found in water consists of animal and vegetable substances in a state of retrograde metamorphosis. The substances of vegetable origin are not in general dangerous impurities; for the most part they belong to the humic, or peaty group. Water containing peaty matter is often straw-coloured, and in general it is soft, *i.e.*, free from earthy salts. Large quantities of vegetable matter in a state of rapid decomposition, of course, render water unwholesome; but it is only in tropical climates that this form of water-pollution is of frequent occurrence. The really dangerous kind of organic matter existing in water is that derived from decomposing animal substances. This kind of matter speedily enters into a state of fermentation, producing highly offensive compounds. Besides, when the animal matter is an ingredient of sewage, there is a possibility that it may be associated with the virus of some such disease as enteric fever or Asiatic cholera.

The organic matter derived from animals is very much richer in nitrogen than the organic matter derived from vegetables: hence, when the combustible portion of the solid matter contained in water is rich in nitrogen, it is assumed to be derived chiefly from an animal source. When house sewage and animal matters generally

\* The author of this report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of this Journal.



enter water, their nitrogen exists in general in the form of albuminoids, and urea, and other substances of an intermediate character—such as, for example, kreatin. Very soon the nitrogen and a portion of the hydrogen of these substances separate in the form of ammonia, and the latter is, by oxidation, converted into water and nitrous acid. Finally, the nitrous acid is changed into nitric acid, and here the process of oxidation terminates.

Sewage contains from one to twenty grains of nitrogen per gallon. In pure water from lakes and rivers the amount of nitrogen (in the forms of albuminoids and ammonia) is often so low as 0·001 grain per gallon. In some bad waters the nitrogen amounts to from 0·1 to 1 grain per gallon. We found more than the latter enormous proportion in water taken from a pump at the Militia Barracks, Ennis. When the unoxidized nitrogen exceeds 0·03, the water containing it is usually considered to be polluted with sewage. A quart of the water to be examined is to be rendered distinctly alkaline by sodium carbonate, and distilled to one half; the distillate is made up to one quart with distilled water, and tested for ammonia. The distilled water and the distilling apparatus must be free from ammonia. The amount of albuminoid nitrogen is determined by distilling a portion of the water which had previously been mixed with caustic potash and potassium permanganate. These agents convert the nitrogen into ammonia, which, passing over with the distilled water, may be estimated in the latter. The ammonia is detected in the water by means of Nessler's solution, which is prepared in the following manner:—35 grains of potassium iodide are dissolved in 120 cubic centimetres of distilled water, and to this mixture there is added a cold and concentrated solution of mercuric chloride, until the mercuric iodide, which at first forms, and then dissolves by agitation in the solution, at length produces a very small permanent precipitate. 100 grains of caustic potash are next dissolved in 200 cubic centimetres of water, and added to the solution already made, and the whole is then made up to a volume of 500 cubic centimetres by the addition of water. After standing for a short time the solution is transferred to a stoppered bottle.

Nessler's solution is so delicate a test for ammonia, that it indicates the presence of one part of that substance in 20,000,000 parts of water. If a specimen of water contains 0·03 grain of ammonia per gallon, it will acquire a very yellow colour on the addition of Nessler's solution. This tint is caused by the production of iodide of

tetramercurammonium. With much ammonia Nessler's test strikes almost a brown colour. We, however, frequently examine waters so pure that Nessler's test produces in them no discolouration; but when water strikes a decided yellowish hue with this agent, the liquid is undoubtedly impure. Some waters contain abundance of albuminoid nitrogen, ammonia, nitrous acid, and nitric acid.

Nitrous acid may be tested by putting a few drops of pure sulphuric or hydrochloric, or even acetic acid, into a test tube of the water, and then adding successively a few drops of solution of iodide of potassium and a rather large quantity of solution of starch. If nitrous acid be present, a blue colour, produced by the presence of iodide of starch, will appear. When in water containing nitric acid (combined, of course) there are dissolved a few clean crystals of ferrous sulphate, and the solution allowed to come into contact with strong sulphuric acid, a deep brown colouration appears where the liquids meet. By comparing the intensity of colour produced in a water under examination by the Nessler test with the hue caused by that re-agent in solutions of ammonia of known strength, the exact quantity of ammonia in a water may be determined. For example, it is easy to dissolve 0.1 grain of ammonia (say in the form of sal ammoniac,  $\text{NH}_4 \text{Cl}$ .) in a gallon of pure water, and compare the colour produced in it by Nessler's test with the hue caused by the re-agent in water under examination. In a similar manner, but not nearly so accurately, the amounts of nitric acid and nitrous acid may be estimated.

There is no doubt but that water containing much albuminoid nitrogen is dangerous for potable purposes, because it may actually contain animal poisons. In the great majority of cases where there is much ammonia in water there is also much organic nitrogen. The presence of these bodies, and even of nitrous acid, shows that the decomposition of the products of animal decomposition is still going on. In the case of water, where the only nitrogen compound is the harmless combined nitric acid, it is still regarded with suspicion by the sanitarian. He thinks it possible that the living germs of disease in polluted water may survive the complete oxidation of the dead organic matter. When, therefore, nitric acid in large amounts is found in otherwise pure water, it is regarded by many chemists as an evidence of "previous sewage contamination," and the water is condemned as being unfit for use.

It is a fact that much larger amounts of nitrogen are found in water in the form of nitric acid than in that of ammonia or of organic

matter; and we have no doubt that in limestone districts water which had never been contaminated with sewage often contains very large quantities of nitric acid. We have rarely found in a water obviously contaminated with sewage more than half a grain of organic and ammoniacal nitrogen per gallon, whilst in waters far removed from all obvious sources of animal impurities we have often detected from two to five grains of nitric acid per gallon. The waters of two pumps, which we have constantly been testing for the last two years, never contain sufficient ammonia to give the slightest colouration with Nessler's test, nor do they contain any nitrous acid, and yet they include enormous quantities of nitric acid. We have not the slightest doubt as to the wholesome character of these waters, notwithstanding the large quantities of nitric acid contained in them. This point is worthy of careful consideration. Is the nitric acid found in well water always derived in great part from effete animal matter? In the case of soft waters we have no doubt that the nitric present is derived from sewage. When we find a water containing only from four to ten grains of solid substances per gallon, we may safely regard the nitric acid present in it as evidence of previous sewage pollution; but the case is very different with hard waters—those most abundant in Ireland, and which contain from 20 to 150 grains of calcium and magnesium salts per gallon. In the presence of lime, and even of limestone (calcic carbonate, more or less impure), the decomposition of organic matter proceeds rapidly, and its nitrogen is soon converted into nitric acid. The soil possesses the power of retaining ammonia, alkaline phosphates, and most of the other materials which contribute to the nutrition of plants; but nitrates pass readily out of the soil, and are usually found (and often in large quantity) in the drainage water. Plants usually contain, when dried, about two per cent. of nitrogen; therefore the portions of plants which decompose on or in the soil produce no inconsiderable amount of ammonia or nitric acid. The well water—which is simply drainage water—in limestone districts is, therefore, very likely to contain nitric acid (derived from decomposed vegetable matters), which the soil was not capable of retaining until appropriated by plants. We can also conceive that the nitric acid produced in the soil by the decay of manure, which is chiefly altered animal substances and straw, may be carried into the wells, whilst the albuminoid nitrogen, ammonia, and other matters, would be retained in the soil.

We also frequently notice that water containing a large amount of nitric acid, but no other nitrogen compound, is almost completely free from chlorine. When water is unmistakably contaminated with sewage, it invariably contains a large amount of chlorine, chiefly in the form of common salt. Water, however, may contain a large amount of chlorine, and yet be free from nitrogen in any form. The wells near the sea occasionally contain common salt; and in many parts of Ireland, and particularly in the city and county of Dublin, the well waters often include very large amounts of earthy chlorides. In a soft water, remote from the sea, the decided presence of chlorine and nitric acid should be considered as clear evidence of previous sewage pollution, and such water should be regarded as dangerous to health.

*The following Table shows the amount of solid matters and ammonia contained in specimens of water which have been submitted to us for analysis.*

An imperial gallon (70,000 grains) contains in grains :—

	Lake Madox, Carnarvon- shire	Dublin pipe water (Vartry)	Pump at All Hallow's College, Dublin	Cahercong Lake, Co. Clare	Pump at Kingstown, Co. Dublin	Shannon water, close to Limerick
Solid substances,	2.460	4.250	52.470	7.570	33.970	6.170
Ammonia,	- 0.001	0.002	0.003	0.003	0.417	0.003
			Pump at Miltia Barracks, Ennis	Public pump, Waterford	Pump at Rock-street, Tralee	
Solids, -	-	- 152.170	70.100	201.720		
Ammonia,	-	- 1.080	4.060	0.063		

*The following Table shows the amount of nitric acid which we have found in some specimens of pump water.*

An imperial gallon contains in grains :—

	Vartry water	Rock-st. pump, Tralee	Holyhead (Wales) Work- house	Gort Work- house	Stillorgan, county Dublin	Public pump, Water- ford	Barrack- street pump, Athy	Thomas-st., Dublin
Solids per gallon, }	4.25	201.72	43.52	118.83	65.75	35.17	81.17	98.90
Faintest trace		5.68	4.60	6.94	7.15	10.90	5.70	15.00

The composition of the Waterford well water is so very peculiar

that we think it desirable to give a somewhat detailed account of it here.

*Composition of the water from a public pump, Waterford.*

An imperial gallon contains:—

Solid matters,	-	-	-	70·100 grains.
Including:—				
Calcium Sulphate (Gypsum),	-	-	-	30·200 "
Chlorine, -	-	-	-	13·000 "
Organic Nitrogen, -	-	-	-	0·400 "
Ammonia, -	-	-	-	4·060 "
Nitrous Acid,	-	-	-	3·100 "
Nitric Aci ,	-	-	-	Decided trace.

The water was tolerably clear, but possessed a faint urinous odour. The chlorine was chiefly in combination with calcium and magnesium; and although the solids amounted to 70 grains per gallon, they did not include even a trace of calcic carbonate. We have looked, in vain, through the medical and scientific journals for the results of water examinations showing anything approaching to the enormous quantity of ammonia present in this remarkable water from Waterford.

In conclusion, we think it would be well if sanitary chemists fully considered the question, whether or not the presence of large quantities of nitric acid (all other nitrogen compounds being present in unimportant amounts) in hard waters is sufficient cause to condemn them. In many parts of Ireland it appears to be impossible to obtain well water free from nitric acid, and in the great majority of these waters which have come under our notice we have detected but minute quantities of albuminoid nitrogen, ammonia, and nitrous acid.

**MORTALITY OF FLAX-MILL AND FACTORY WORKERS.**

In manufacturing various articles, and in the performance of certain industrial operations, solid particles, in quantities more or less considerable, are thrown into the atmosphere. Persons breathing air containing these solid particles, or dust, are often peculiarly liable to diseases of the respiratory organs; and, in some instances, other maladies are caused by the constant inspiration of dust-laden air. Large quantities of solid particles (dust, smoke, &c.)

are thrown into the air during the preparation of snuff and tobacco, bacon, bone black, coke, various kinds of charcoal, plaster of Paris, tobacco pipes, tiles, crockery (where smoke-consuming kilns are not used), kelp, soda ash, pearl ash, steel, wadding, feathers, flour. The same nuisance is created by the roasting of aluminous shales, pyrites, coffee, &c.; by grinding drugs, clay, cement, &c.; in wire-drawing and steel-grinding works; by the treatment (thrashing, carding, hackling, spinning, &c.) of woollen, cotton, and linen textures. Solid particles are sent into the air in the act of sweeping chimneys, hewing coal, and beating carpets. Amongst steel grinders the mortality from pulmonary disease is very high. According to Doctors Hall and Wynter, the duration of life amongst "dry grinders of forks," is 29 years; razor grinders, 31 years; edge-tool grinders, 32 years; spring knife and file grinders, 35 years; saw and sickle grinders, 38 years. In the factories where wet grinding is employed, and also where fans are used, the mortality is considerably less. Amongst coal miners cases of chronic bronchitis, emphysema, and "black lung" are very common. Cotton weavers suffer very much from the dust abraded from the size, or starchy matter, which stiffens the cotton cloth. The workers in shoddy mills, bone turners, workmen handling papers coloured with arsenical pigments, the women employed in the preparation of artificial flowers, and flax hacklers and spinners, are all more or less liable to injury from the inhalation of solid particles.

Dr. C. D. Purdon, a certifying surgeon under the Factory Acts, has published a paper on the Mortality of Flax-mill and Factory Workers, and on the diseases to which they are more than ordinarily liable. Dr. Purdon's observations were confined to his district—a most important one—namely, the city of Belfast and some adjacent villages. The population of the district is estimated at 200,348, and Dr. Purdon distributes the people into the following classes:—Flax-mill and factory workers, numbering 28,127; the artizan and labouring populations, including 165,221 souls; and the gentry and mercantile class, about 7,000 in number. Dr. Purdon has ascertained the death-rates amongst these classes, and has tabulated them as follows:—

TABLE I.—Age, Occupation, and Nature of Disease of persons who died in Belfast Certifying Surgeon's District in 1872 :—

Diseases	1. Flax-mill and Factory Workers, including their children (28,127)										2. Artizan and Labouring Classes (163,321)										3. Gentry and Mercantile Classes (7,000)										
	Infants	10 yrs.	20 yrs.	30 yrs.	40 yrs.	50 yrs.	60 yrs.	70 yrs.	80 yrs.	90 yrs.	Infants	10 yrs.	20 yrs.	30 yrs.	40 yrs.	50 yrs.	60 yrs.	70 yrs.	80 yrs.	90 yrs.	Infants	10 yrs.	20 yrs.	30 yrs.	40 yrs.	50 yrs.	60 yrs.	70 yrs.	80 yrs.	90 yrs.	
Inflammatory Diseases,	51	5	12	18	6	4	2	—	—	—	502	43	52	64	77	78	55	67	12	—	—	47	4	9	8	14	11	5	7	3	—
Zymotic Diseases, -	36	5	33	13	5	5	—	—	—	—	292	38	79	62	44	29	30	21	5	—	—	19	6	6	12	3	7	5	2	1	—
Phthisis and Chest Affections,	81	13	119	69	32	10	5	—	1	—	637	63	180	161	132	145	159	112	37	1	—	40	12	19	19	16	10	22	12	7	3
Neurotic Diseases, -	15	—	3	4	4	1	2	—	—	—	138	5	9	13	21	25	42	26	10	2	—	15	1	1	5	5	8	6	7	2	2
Decay of Nature, -	—	—	—	—	1	—	6	3	2	—	—	—	—	—	—	4	38	79	51	12	2	—	—	—	—	—	1	3	11	14	3
Total, -	183	23	167	104	48	20	15	8	3	3	1589	149	320	300	274	281	324	305	116	15	2	121	23	35	44	38	37	41	39	27	8

**TABLE II.**—*Number of Deaths in Belfast Certifying Surgeon's District in 1872, classified according to Employment and Nature of Disease, irrespective of age :—*

Diseases	1 Flax-mill and Factory Classes	2 Artisan and Labouring Classes	3 Gentry and Mercantile Classes	Total
Inflammatory Diseases, - -	98	953	108	1156
Zymotic Diseases, - -	97	600	61	758
Phthisis and Chest Affections, -	330	1627	160	2117
Neurotic Affections, - -	29	311	52	392
Decay of Nature, - -	12	186	32	230
	566	3674	413	4653 <sup>a</sup>

**TABLE. III.**—*Death Rate per 1000 of the persons employed in each of the Classes of Flax-mill and Factory Workers.*

Employment	Number of Persons Employed	Deaths from Phthisis and Diseases of the Chest	Death Rate from Phthisis and Diseases of the Chest
Machine Boys, - - -	1163	7	6· per 1000
Sorters, 1247, } Roughers, 834, }	2081	23	11·1 „
Doffers, &c., - - -	3704	11	3· „
Spinners, - - -	4485	42	9·5 „
Preparing Room, - - -	3133	98	31·3 „
Reelers, - - -	2779	3	1·1 „
Winders, - - -	2461	13	5·3 „
Weavers, - - -	5518	51	9· „
Warpers, - - -	197	1	5· „
	25521	249 <sup>b</sup>	9·8 per 1000

<sup>a</sup> Exclusive of the death of 81 infants.

<sup>b</sup> Deaths from unnatural causes are not included.



TABLE IV.—*Mortality of Belfast Factory District in 1872, Death Rate per 1000, and per centage of Deaths caused by Phthisis and Diseases of the Respiratory Organs.*

	1 Flax Manufacturing Population, 28,127		2 Artizan and Labouring Population, 166,231		3 Gentry and Mercantile, 7,000		Total 200,348
	Deaths	Rate per 1000	Deaths	Rate per 1000	Deaths	Rate per 1000	Rate per 1000
Inflammatory Diseases, -	98	3.5	950	5.7	108	15.4	5.8
Zymotic Diseases, - -	98	3.4	600	3.6	61	8.7	3.8
Phthisis, and Diseases of the Respiratory Organs, -	330	11.8	1627	9.7	160	22.9	10.6
Neurotic Diseases, - -	29	1.0	311	1.8	52	7.4	1.9
Decay of Nature, - -	12	.4	186	1.1	32	4.6	1.2
Deaths from Phthisis, &c., com- pared with total number, -	566	20.1	3674	21.9	413	59. <sup>a</sup>	23.3
	.58 or $\frac{58}{100}$ or about $\frac{2}{5}$		.44 $\frac{44}{100}$ a little over $\frac{2}{5}$		.39 $\frac{39}{100}$ a little under $\frac{2}{5}$		

Population of Belfast Factory District (allowing the usual rate of increase to have continued since last census) amounts to 200,348.

These tables show that the flax-manufacturing operatives suffer more from pulmonary disease than the other classes above named. Amongst the mill-workers nearly three-fifths of the deaths occur from diseases of the respiratory organs; whilst amongst the other classes only two-fifths of the deaths from all causes are attributable to pulmonary disease.

Amongst the mill-workers those in the "preparing rooms" suffer most from phthisis, &c., and the death-rate in this class is very high, namely, 31 per 1,000 per annum. Next in the order of unhealthiness come the "hacklers." The mortality amongst the spinners and weavers is also very high. Dr. Purdon considers that the unhealthiness of the mill-workers arises not only from the nature of their occupation (which involves the constant inhalation of a dusty

<sup>a</sup> The mortality amongst the gentry and mercantile class, as shown by these Tables, is enormous—413 deaths having occurred in a population of only 7,000 within one year.

and otherwise impure atmosphere), but also from coming to work when too young, from insufficient food and clothing, and from neglect of sanitary laws.

“ Under the present Factory Acts, a child eight years of age may be employed for six hours each day, independent of school attendance of three hours daily, and is obliged each alternate fortnight to commence work at six o'clock in the morning, often travelling some miles before arriving at the mill, where it is placed in the rooms in which half-timers are usually employed, viz.—the machine, the preparing, and the spinning-rooms. In the two former departments the atmosphere is constantly loaded with the flax dust called ‘Pouce.’ This is inhaled for six hours each day. The consequence is that their lungs, by the time they become full timers, are a good deal affected, and the irritation being kept up continually, they sooner or later suffer from chest affections. The children employed as Doffers in the spinning-rooms do not suffer so much from dust as from the heat and vapour arising from the boiling water through which the flax is passed, and from their clothes being constantly wetted by the spray thrown off from the spindles. The frequent change from the hot atmosphere of the work-rooms to the cold air without also induces bronchial affections. The weaving class, which I formerly considered to be a very healthy one, appears to suffer from diseases of the respiratory organs also. This is considered to be caused by the constant inhaling of the damp air in a room where the temperature is kept rather high. The constant neglect of sanitary laws is likewise most injurious to those that have been working all day in mills; for on their return home, in place of breathing a pure air in well-ventilated apartments, affording sufficient accommodation, they go into small and over-crowded rooms, where they sleep all night and arise in the morning far from being refreshed by their rest. (There are, of course, exceptions to this state, owing to the dwelling-houses being built by the mill proprietors, who are very anxious about the health of their workers.) And in place of taking good or sufficient nourishment to support and nourish the system, in almost every instance bread and tea is the sole diet used. The consequence is that they suffer from ‘Tea Dyspepsia,’ and weak constitutions. The children are, as a rule, badly developed, and small. I have, through the kindness of Mr. Holmes, manager for Mr. Campbell of Mossley, been enabled to institute experiments with respect to diet, showing how a change has affected several half-timers who were reared on bread and tea.

The consumption of stimulants is also producing sad havoc amongst the working classes, who spend the greater portion of their wages in the public houses, leaving their families destitute of the necessities of life in very numerous instances. If I may single out a class that injure themselves more than any other I would mention the hacklers, for when they begin to suffer from the effects of the dust, they commence to drink and go on using alcoholic stimulants, till at last they die from the effects of drink, or hasten the advance of chest affection by its inordinate consumption. The clothing of the children is very scanty, and quite insufficient to give heat to the body, so after coming out of hot rooms into the cold air, they are constantly attacked with bronchitis.

“ The diseases from which flax-mill workers chiefly suffer are those peculiar to the preparing and spinning processes. In the former the lungs chiefly suffer from the constant inhaling of the ‘pouce,’ as already mentioned. The irritating quality of the dust is felt on the throat, which soon becomes dry. This irritation gradually creeps into the lungs, and produces chronic inflammation of the lining membrane, which soon manifests its presence by the worker being attacked each morning with a paroxysm of dyspnoea and coughing; the dyspnoea is sometimes so great that he takes hold of the table of the machine in order to enable him to get over the attack more easily; this state is so well known that when a worker is seen suffering so, he is said to be ‘poucy.’ Those employed in the roughing, sorting, hackling and preparing of flax, suffer from this affection, and in the great majority of cases die from phthisis, &c. Of those employed in the spinning-room, the spinners are frequently attacked with vertigo and fainting, and many accidents have occurred by their falling on the machinery. They also suffer from varicose veins and œdema of the ankles. The doffers, &c., frequently, on their first employment in the mills, are attacked with a peculiar kind of fever, which they call ‘mill fever.’ This comes on when they are a few days engaged at work. The symptoms are rigors, nausea, and vomiting, speedily followed by pain in the head, thirst, heat of skin, &c.; this state continues from two to eight days, when the disease subsides of itself. No treatment is required or sought for, as the worker knows that it runs a certain course and will leave him comparatively well, but rather weak for a few days, when he may return to his work without any fear of ever taking it again. The cause assigned for its origin is the smell of the oil along with the vapour and heat of the room. A peculiar eruption also

attacks the uncovered parts of the body—this I call ‘lichen.’ I have never seen an adult affected with it. The cause of the eruption is said to be the effect produced by the flax water on the young person’s skin.

“Now the suggestions that I would offer towards mitigating the mortality that occurs in certain branches of flax manufacturing are—(1), that no half-timers be allowed to work before they are ten years of age, and in place of changing the sets every fortnight, that the strong and well developed, who are about twelve years old, be always kept in the morning set, and before being so placed that they should be re-certified by the surgeon to be fit for such employment; (2), that no half-timers be employed in the unhealthy processes, and that those who are so employed should be at least fifteen years of age, healthy and well-developed; (3), a thorough system of ventilation should be carried out in these rooms; (4), the wearing of the ‘Baker Respirator’ made compulsory; (5), a quarterly inspection of the mill by the certifying surgeon, who should see the effect the work has on the constitution of those engaged, and, if suffering from incipient disease, they should be obliged to cease working; also, there should be an examination on every fresh engagement; (6), the lodging-houses, &c., should be inspected regularly, and not more than a certain number allowed to inhabit each room.”

#### TYPHOID SPREAD BY MILK.

It now seems to be clearly established, that sudden and localized outbreaks of typhoid fever are occasionally caused by the use of milk poisoned with the virus of that disease. It has long been known that typhoid fever is frequently propagated through the medium of potable water. When house sewage finds its way into the wells, it is not unlikely that it may occasionally carry into them the germs of typhoid. If well water contaminated with typhoid poison be used for the purpose of adulterating milk, it is easy to understand how the latter may be the means of causing a sudden outbreak of typhoid. Even in the case of unadulterated milk it is quite possible that it may be contaminated with typhoid poison, derived from an impure atmosphere, or from the actual contact of persons recently affected with the disease, or who themselves are in direct communication with affected persons. Milk is a liquid which very readily absorbs and retains atmospheric gases, vapours, and solid particles. There have been recorded seven

instances in which typhoid fever was spread through the medium of milk—namely, at Penrith, Islington, Leeds (on two occasions), Parkhead, Chester, and Edinburgh. Dr. Bell, of St. Andrews, has also very clearly shown<sup>a</sup> that twenty-six persons contracted scarlet fever by drinking milk which contained portions of desquamated cuticle, derived from a patient affected with scarlatina. Attacks of cholera too, we have no doubt, have often been caused by the use of milk adulterated with contaminated water. We have, in a former Report, referred to an outbreak of cholera amongst prisoners undergoing the punishment of solitary confinement in Mountjoy Prison, Dublin, and which we had no difficulty in referring to the use of adulterated milk. On this subject we may quote a letter recently addressed by Dr. Grimshaw, of Dublin, to Dr. John Dougal, of Glasgow:—

“My grounds for believing that cholera has been spread by milk are—1st. That an epidemic which arose in this city seemed to exclude every other source of infection. 2nd. That a great many dairy shops in the poorer part of the town were surrounded by little groups of cholera cases, and in nearly all these the dairy shop itself had a case in the house. This information I made out from a list of cholera localities kept by Dr. Mapother, the health officer for the city. 3rd. The one case that I happened to know, that a certain dairy about ten miles from this sends out milk in carts, but also has a dairy shop in the neighbourhood. The water from a particular pump was used by the people in the dairy shop, and probably put into the milk. This pump was in the immediate vicinity of the shop, but of course milk supplied direct from the yard would not be watered by this pump. Persons who drank water from this pump took cholera, and several died of it. Several who did not get water from the pump, but bought milk at the dairy shop, got cholera, and died of it; and there was cholera in the dairy shop. My own family, and those of several of my acquaintance, were supplied with milk from the carts from the yard; none of them, as far as I know, were affected by cholera. These statements are from memory, as the epidemic was not carefully noted at the time. That small-pox can be conveyed in a similar manner can scarcely be doubtful. I know that numbers of dairies were invaded by the epidemic, and that the customers in some instances said they believed they got small-pox from the milk, and certainly many dairymen were ruined in consequence.”

Last July a serious outbreak of enteric fever occurred in Maryle-

<sup>a</sup> On the Propagation of Scarlet Fever. By Oswald Home Bell, M.D., Professor of Medicine, St. Andrew's University. *Lancet*, 29th Oct., 1870.

bone, London, one of the most wealthy and salubrious districts of the metropolis. The disease appeared in the course of a few weeks in no fewer than 123 families. Many facts indicated that the cause of the outbreak was poisoned milk. Out of the 123 families affected with the disease, 106 obtained their milk from one source—namely, one of the new companies established for the purpose of supplying the metropolis with pure milk. The facts of this case have been investigated by Dr. Murchison, Dr. Whitmore, Mr. Netten Radcliffe, Dr. Corfield, and Mr. Morton, and the results of their inquiries leave not a shadow of a doubt as to the origin of the outbreak. Indeed, the milk company, after a vigorous attempt to shift the responsibility from themselves, were at length obliged to admit that the milk was the cause of the epidemic. In a letter addressed to the *Times*, 26th August, 1873, the secretary to the company stated:—"There is now, we regret to say, no doubt that a large per centage of the recent cases of typhoid fever in Marylebone, as in some other districts, has been caused by milk supplied by this company." This admission was made after it had been clearly shown that there was typhoid fever at one of the dairy company's farms, and that one of the men employed there had died from it on the 8th of June. It was also shown that the sanitary condition of this man's dwelling, and of the farm generally, was very bad, and that the water could hardly have escaped contamination from typhoid poison.

The evidence in favour of the assertion that the outbreak of typhoid fever in Mayfair was due to the use of the milk from the "Dairy Reform Company" was, as we have stated, of the strongest possible nature. In a house where two servants, on board wages, used the suspected milk, and two other servants milk from another dairy, the former got typhoid, the latter escaped. In the house of a nobleman the servants, ten in number, used the suspected milk, and five sickened from typhoid; whilst of the family who used milk derived from another source, not one contracted the disease. A titled lady purchased the suspected milk: two of her three children, who drank it night and morning, caught typhoid fever; the third, who took tea in the morning and orange wine and water at night, escaped. The foregoing are only a few examples of the nature of the evidence against the dairy company.

The disease chiefly attacked children, evidently because they were the principal consumers of the milk, and used it to a great extent uncooked. In the family of a physician supplied with the

suspected milk no case of typhoid occurred, but it appears that in his household the milk was always boiled before being used. Contaminated milk mixed with hot tea might thereby be deprived of its noxious property. The thorough boiling of milk from cows affected with foot-and-mouth disease has been found to destroy the poison which, it is well-known, exists in the fresh milk. The same process probably destroys the virus of typhoid in milk; but, nevertheless, we should hesitate to make use of any cooked liquid which might probably contain the contagious matter of enteric fever.

One good consequence of the outbreak of typhoid from the use of poisonous milk is that the Dairy Reform Company have decided to appoint a medical officer to supervise the sanitary condition of their numerous farms and dairies, and they have appointed an analyst to test the quality of the milk. A new association, entitled the Sanitary Milk Company, has also been projected, for the purpose of supplying milk guaranteed to be free from adulteration, and, so far as the most perfect medical and veterinary supervision can prevent it, free also from animal poisons of all kinds.

In August, 1873, an outbreak of enteric fever in Brighouse, Yorkshire, was attributed, by Dr. Thomas Britton, of Halifax, to the use of poisoned milk. Of the 62 persons affected with the disease, 59 drank the milk supplied from a particular dairy. On discontinuing the use of the suspected milk the disease disappeared from the district.

With reference to the introduction of zymotic poison into milk, Dr. John Dougal makes the following observations in the *Glasgow Medical Journal* for May, 1873:—

“It may get infected—1st, by impure water; and 2nd, by impure air. For many years past, large quantities of milk have been sent from near and distant farms to Glasgow and other large towns. In these farm-yards the manure—human and bovine—is commonly placed in the most convenient situation for deposit and removal. Generally, at a short distance from the manure heap, stands the water pump. This dangerous juxta-position of ingesta and excreta might not be of much consequence were regard had to the ‘dip’ of the underlying strata (which in Scotland at least is seldom horizontal) in determining the safest hygienic position of the well and the ‘midden.’ But as such is not the case, it must frequently happen by chance that the manure is placed exactly so that the fluid which percolates through it will gravitate into the well. Doubtless, however, in some cases, there may be a substratum of brick clay impervious to liquids, or a deep and porous subsoil which will have the effect for a time of oxidizing the organic matter during its

passage through it, as in sewage irrigation, and thus to a trifling extent render the liquid innocuous. But this process cannot be permanent, as the best constructed filters for water-works in course of time have their interstices choked with filtered matter, and require renewal. Many must remember how, previous to the introduction of Loch Katrine water into Glasgow, the water then supplied was frequently muddied with a conglomeration of alluvial debris. Hence it is easily seen how the water in farm wells may get seriously contaminated with putrid organic matter. This is more likely to take place during a drought, as then the wells frequently get dry, or nearly so, and the proportion of organic matter to the water must be much higher than when the well is full; excepting, perhaps, at the beginning of wet weather, which has been preceded by a drought, when the amount of decayed material washed into the soil is greatest. It is unnecessary to say more on this point, as all cases, and they are numerous, of tainted water supply, are traceable to one cause, viz., the infiltration of organic matter—call it liquid manure, human excreta, or sewage—through some defect in the drains, or from a want of drains, or from the relative situations of the polluting and polluted substances.

“A very important question here presents itself in reference to the origin of, at least, enteric fever—namely, whether in order to produce this fever it is or is not necessary that there must be present the specific excrement of a previous case of enteric fever. That this fever is engendered by its own excremental pollution of air and drinking water, is an established fact; but, as I have previously stated, many distinguished physicians are of opinion that it may arise *de novo*. Dr. Murchison<sup>a</sup> cites numerous instances of sporadic and limited epidemic outbreaks of enteric fever, the spontaneous origin of which in sewer emanation, and in contaminated drinking water, was proved to a certainty—there being no proof of previous pollution with enteric excreta. ‘This,’ he says,<sup>b</sup> ‘explains why fever arising from sewer emanations is always enteric and not typhus or relapsing fever; why enteric fever is endemic in many places and epidemic in circumscribed localities; why it attacks the rich as well as the poor; why it occurs in isolated country houses as well as in large towns; and why it is most prevalent in autumn and warm seasons.’ In the eighth annual report of the Sanitary Commissioners of the Government of India, recently issued by Dr. Bryden, the following occurs:—‘What I have shown is, that the spontaneous origin of enteric fever is a fact; but that a zymotic element is generated when typhoid is so developed, and that every case of enteric fever should be looked on as a focus from which enteric fever may spread.’ Premising, then, that

<sup>a</sup> Treatise on Continued Fevers.

<sup>b</sup> Ibid. p. 438.



typhoid may be elaborated *de novo* in the manner stated, we see the peculiar conditions favourable to its origin and evolution exist permanently at the very source of a considerable portion of our milk supply, and that independent of any cases which may occur in the farm houses themselves. In such an event it is obvious that the danger of infection would be greatly aggravated from the presence of enteric excrement, which all admit contains the special poison in its most virulent form.

It is thus easy to see how the milk may get contaminated with enteric virus. Water from a tainted well may be added to the milk unintentionally. But, from all we know of zymotic poisons, a small quantity of such water left in the vessels after washing may be sufficient to infect the milk. In Dr. Ballard's<sup>a</sup> report on the outbreak of enteric fever at Islington—causing 167 cases with 25 deaths, and one at Leeds causing 107 cases with 11 deaths—both traced to the use of impure milk—he has clearly shown that the Leeds outbreak was caused by tainted water mixed with the milk, because, when the handle of the pump which supplied the water was tied, the fever ceased. In the Islington outbreak the balance of evidence points to the milk having been infected by the small quantity of foul water left in the vessels after washing. Dr. Ballard says—'I confess that to my mind this is not an impossibility; we all know how small, almost infinitesimal, an admixture of sewage will poison a well or stream. Nor is the idea of reproduction of the typhoid contagium out of, within, or in presence of an appropriate organic material, at all foreign to the prevailing opinion upon the subject. Future experience may show that milk, which has remarkable relations to chemical ferments, is a substance peculiarly adapted also to the reproduction of morbid contagia, or to the contagia of typhoid in particular.'

"(2.) *By impure air.*—That milk, by exposure to air, suspending certain specific contagia, is capable, for a time at least, of preserving, probably of reproducing, whatever portions of the contagia may settle on its surface, either from the air, or from the bodies of infected persons, so that these may evolve their specific morbid phenomena in individuals swallowing the milk, seems to me sufficiently proven by the outbreak of enteric fever at Parkhead, by the second outbreak of enteric fever at Leeds, by the outbreak of enteric fever at Penrith in 1857, by the outbreak of scarlatina at St. Andrews, and also the one of scarlatina at Leeds. My excellent and esteemed friend, Dr. Russell, officer of health for the city, clearly demonstrated the foregoing in his report on the Parkhead outbreak. Many eminent authorities are of opinion that enteric fever is not infectious in the sense that small-pox is. Others hold that the alvine dejections constitute the chief, if not the sole medium of communication. Be that as it may, Dr. Russell has proven (I need not go into details, his

<sup>a</sup> Op. cit.

report is so recent), that individuals may contract the fever who have not inhaled the emanations directly from enteric excreta,—who have not been exposed to the exhalations of an enteric patient's lungs or skin,—who have not swallowed enteric water, nor respired enteric sewer gas, but who have partaken of milk rendered zymotic by exposure in the vicinity of a typhoid patient. Of the Leeds outbreak, Dr. Robinson,\* the officer of health, gives in his last annual report (1873), the following remarkable details, which I have abridged :—‘A farm-house in the country became infected with typhoid fever in September last. The head of the house died, and subsequently five members of the household suffered from the disease. Milk from this infected source is supplied by a dairyman to a respectable district of the town, where a virulent outbreak of typhoid takes place, and eighty persons who obtained their milk from this dairyman contracted fever, fourteen of whom died. No fever existed at the milk-vendor's house when the cause of the outbreak was found (though subsequently his daughter took typhoid). The farm is visited, the water is found blameless, being obtained from a source at a higher level than the house, and analysis showed it pure. In the house itself the sick were placed in a room communicating with the kitchen and dairy. Those engaged with the milk attended the sick. Unclean linen was observed placed side by side with the lids of the milk-cans. Outside, an immense fluid, reeking mass of manure adjoined the stable where the cows were milked, on to the surface of which the drain from the kitchen sink and slop-stone poured its contents. The common privy, which received the typhoid excreta, was overflowing and draining. Thus innumerable particles of poison must have been floating around the house, and from their close contiguity, permeating the cow stable, in which vicinity the milk remained till sent away.’ This, Dr. Robinson thinks, is sufficient to show not only the possibility, but the almost certain probability of the sad results which followed. It seems to me worthy of remark, that Dr. Robinson found those who habitually took milk, or large quantities of cream in their tea or coffee, to suffer from the fever. This proves what I have before stated, that cream is a suitable nidus for zymotic poison, and also that the poison is not destroyed by the usual temperature of hot infusions of tea or coffee. I would further remark that it is highly probable the cause of the fever breaking out in the farm-house originated in the polluted condition of the farm-yard.”

#### MANAGEMENT OF CHILDREN.

The high mortality which prevails amongst children is not confined to the lower classes of society, although amongst the latter

\* *Op. Cit.*

the infantile death-rate reached its maximum. During the quarter which ended on the 28th of June, 1873, 1,941 persons died within the Dublin Registration District, and of this number, 533, or 27·5 per cent., were children under five years of age. In many other towns the death-rate amongst children is, in proportion to the general mortality, even far higher; and in the case of exceptionally unhealthy populations, nearly half the deaths occur amongst children under five years of age.

During very warm and very cold weather, the infantile mortality increases; in the latter case owing partly to the want of sufficient clothing, and of heat from food and fuel. Children, owing to their feeble vitality, resist with difficulty the effects of cold. A high temperature, too, is very trying to children. In India, in many of the British colonies, and in the United States, the high summer temperature occasions a considerable mortality amongst young children of the Teutonic and Celtic races. Even in Great Britain and Ireland, the effects of a high summer temperature are very noticeable in the case of children. Diarrhoea, colic, and English cholera, are the chief diseases produced by heat; but from it also frequently arise the well-known train of symptoms which characterize what has been aptly termed thermic fever. This subject has attracted a considerable amount of attention amongst the physicians of the United States. At a meeting of the Obstetrical Society of Philadelphia, held on the 3rd April, 1873, a committee of that body was appointed "to consider the causes and prevention of infant mortality during the summer months." The committee (Drs. Wm. Goodell, J. Forsyth Meigs, John L. Ludlow, Albert H. Smith, John S. Parry, and Wm. F. Jenks), reported to the Society on the 1st May, and its suggestions, after amendment, were adopted by the Society, and ordered to be printed and published. They appear to be excellent suggestions, and worthy the attention of British as well as American practitioners (whose advice on the management of children is often asked by mothers), and we give them, therefore, *in extenso*.

**"RULE 1.**—Bathe the child once a day in tepid water. If it is feeble, sponge it all over twice a day with tepid water, or with tepid water and vinegar. The health of a child depends much upon its cleanliness.

**"RULE 2.**—Avoid all tight bandaging. Make the clothing light and cool, and so loose that the child may have free play for its limbs. At night undress it, sponge it, and put on a slip. In the morning remove the slip and dress the child in clean clothes. If this cannot be afforded,

thoroughly air the day-clothing by hanging it up during the night. Use clean diapers, and change them often. Never dry a soiled one in the nursery or in the sitting-room, and never use one for the second time without first washing it.

“**RULE 3.**—The child should sleep by itself in a cot or cradle. It should be put to bed at regular hours, and be early taught to go to sleep without being nursed in the arms. Without the advice of a physician, never give it any *spirits, cordials, carminatives, soothing syrups, or sleeping drops. Thousands of children die every year from the use of these poisons.* If the child frets and does not sleep, it is either hungry or else ill. If ill, it needs a physician. Never quiet it by candy or cake; they are the common causes of diarrhœa and of other troubles.

“**RULE 4.**—Give the child plenty of fresh air. In the cool of the morning and evening, send it out to the shady sides of broad streets, to the public squares, or to the park. Make frequent excursions on the rivers. Whenever it seems to suffer from the heat, let it drink freely of ice-water. Keep it out of the room in which washing or cooking is going on. It is excessive heat that destroys the lives of young infants.

“**RULE 5.**—Keep your house sweet and clean, cool and well aired. In very hot weather let the windows be open day and night. Do your cooking in the yard, in a shed, in the garret, or in an upper room. Whitewash the walls every spring, and see that the cellar is clear of all rubbish. Let no slops collect to poison the air. Correct all foul smells by pouring carbolic acid or quicklime into the sinks and privies. The former article can be got from the nearest druggist, who will give the needful directions for its use. Make every effort yourself, and urge your neighbours to keep the gutters of your street or court clean.

“**RULE 6.**—*Breast-milk is the only proper food for infants.* If the supply is ample and the child thrives on it, no other kind of food should be given—while the hot weather lasts. If the mother has not enough, she must not wean the child, but give it, besides the breast, goat's or cow's milk, as prepared under **RULE 8.** Nurse the child once in two or three hours during the day, and as seldom as possible during the night. Always remove the child from the breast as soon as it has fallen asleep. Avoid giving the breast when you are over-fatigued or overheated.

“**RULE 7.**—If, unfortunately, the child must be brought up by hand, it should be fed on a milk-diet alone, and that, warm milk out of a nursing bottle, as directed under **RULE 8.** Goat's milk is the best, and, next to it, cow's milk. If the child thrives on this diet, *no other kind of food whatever should be given while the hot weather lasts.* At all seasons of the year, but especially in summer, there is no safe substitute for milk to an infant that has not cut its front teeth. *Sago, arrowroot, potatoes, corn-*

*flour, crackers, bread, every patented food, and every article of diet contains starch, cannot and must not be depended on as food for very young infants.* Creeping or walking children must not be allowed to pick up unwholesome food.

"**RULE 8.**—Each bottleful of milk should be sweetened by a small lump of loaf sugar, or by half a teaspoonful of crushed sugar. If the milk is known to be pure, it may have one-fourth part of hot water added to it; but, if it is not known to be pure, no water need be added. When the heat of the weather is great, the milk may be given quite cold. Be sure that the milk is unskimmed; have it as fresh as possible, and brought very early in the morning. Before using the pans into which it is to be poured, always scald them with boiling suds. In very hot weather, boil the milk as soon as it comes, and at once put away the vessels holding it in the coolest place in the house—upon ice if it can be afforded, or down a well. Milk, carelessly allowed to stand in a warm room, soon spoils and becomes unfit for food.

"**RULE 9.**—If the milk should disagree, a tablespoonful of lime water may be added to each bottleful. Whenever pure milk cannot be got, try the condensed milk, which often answers admirably. It is sold by all the leading druggists and grocers, and may be prepared by adding, without sugar, one teaspoonful or more, according to the age of the child, to six tablespoonfuls of boiling water. Should this disagree, a teaspoonful of arrowroot, of sago, or of corn-starch to the pint of milk may be cautiously tried. If milk in any shape cannot be digested, try, for a few days, pure cream diluted with three-fourths or four-fifths of water,—returning to the milk as soon as possible.

"**RULE 10.**—The nursing-bottle must be kept perfectly clean; otherwise the milk will turn sour, and the child will be made ill. After each meal, it should be emptied, rinsed out, taken apart, and the tube, cork, nipple, and bottle be placed in clean water, or in water to which a little soda has been added. It is a good plan to have two nursing-bottles, and to use them by turns.

"**RULE 11.**—Do not wean the child just before or during the hot weather; nor, as a rule, until after its second summer. If suckling disagrees with the mother, she must not wean the child, but feed it in part, out of a nursing-bottle, on such food as has been directed. However small the supply of breast-milk, provided that it agrees with the child, the mother should carefully keep it up against sickness; it alone will often save the life of a child when everything else fails. When the child is over six months old, the mother may save her strength by giving it one or two meals a day of stale bread and milk, which should be pressed through a sieve and put into a nursing-bottle. When from eight months to a year old, it may have also one meal a day of the yolk of a fresh and rare-boiled egg, or one of beef or mutton broth, into which stale bread has

been crumbed. When older than this, it can have a little meat finely minced ; but even then milk should be its principal food, and not such food as grown-up people eat.

*"Brief Rules for Cases of Emergency.*

"**RULE 1.**—If the child is suddenly attacked with vomiting, purging, and prostration, send for a doctor at once. In the meantime, put the child for a few minutes in a hot bath, carefully wipe it dry with a warm towel, and wrap it in warm blankets. If its hands and feet are cold, bottles filled with hot water and wrapped in flannel should be laid against them.

"**RULE 2.**—A mush poultice, or one made of flaxseed meal, to which one-quarter part of mustard flour has been added, or flannels wrung out of the vinegar and water, should be placed over the belly.

"**RULE 3.**—Five drops of brandy in a teaspoonful of water may be given every ten or fifteen minutes ; but if the vomiting persists, give the brandy in equal parts of milk and lime water.

"**RULE 4.**—If the diarrhoea has just begun, or if it is caused by improper food, a teaspoonful of castor oil, or of the spiced syrup of rhubarb, should be given.

"**RULE 5.**—If the child has been fed partly on the breast and partly on other food, the mother's milk alone must now be used. If the child has been weaned, then it should have pure milk with lime water, or weak beef-tea, or chicken-water.

"**RULE 6.**—The child should be allowed to drink cold water freely.

"**RULE 7.**—The soiled diapers or the discharges should be at once removed from the room, but saved for the physician to examine at his visit.

*"Recipes for Special Forms of Diet.*

"**Boiled Flour or Flour Ball.**—Take one quart of good flour; tie it up in a pudding-bag so tightly as to get a firm, solid mass ; put it into a pot of boiling water early in the morning, and let it boil until bedtime. Then take it out and let it dry. In the morning, peel off from the surface and throw away the thin rind of dough, and, with a nutmeg-grater, grate down the hard dry mass into a powder. Of this from one to three teaspoonfuls may be used, by first rubbing it into a paste with a little milk, then adding it to about a pint of milk, and, finally, by bringing the whole to just the boiling point. It must be given through a nursing-bottle.

"An excellent food for children who are costive in their bowels may be made by using bran meal or unbolted flour instead of the white flour, preparing it as above directed.

"**Rice Water.**—Wash four tablespoonfuls of rice; put it into two

quarts of water, which boil down to one quart, and then add sugar and a little nutmeg. This makes a pleasant drink.

"A half-pint or a pint of milk added to this, just before taking it from the fire, and allowed to come to a boil, gives a nourishing food suitable for cases of diarrhœa.

"Sago, tapioca, barley, or cracked corn can be prepared in the same manner.

"*Beef-Tea*.—Take one pound of juicy lean beef—say a piece off of the shoulder or the round—and mince it up with a sharp knife on a board or a mincing-block. Then put it with its juice into an *earthen* vessel containing a pint of tepid water, and let it stand for two hours. Strain off the liquid through a clean cloth, squeezing well the meat, and add a little salt. Place the whole of the juice thus obtained over the fire, but remove it as soon as it has become browned. Never let it boil; otherwise most of the nutritious matter of the beef will be thrown down as a sediment. Prepared in this way, the whole nourishment of the beef is retained in the tea, making a pleasant and palatable food. A little pepper or allspice may be added if preferred.

"*Mutton Tea* may be prepared in the same way. It makes an agreeable change when the patient has become tired of beef-tea.

"*Raw Beef for Children*.—Take half a pound of juicy beef, free from any fat; mince it up very finely; then rub into a smooth pulp either in a mortar or with an ordinary potato-masher. Spread a little out upon a plate and sprinkle over it some salt, or some sugar if the child prefers it. Give it with a teaspoon or upon a buttered slice of stale bread. It makes an excellent food for children with dysentery."

#### HYGIENE OF DWELLINGS.

The subject of the sanitary condition of dwellings continues to attract the attention of sanitarians, and many interesting books, pamphlets, and papers upon it are constantly being presented to the medical profession and to the public at large. The celebrated professor of hygiene at the University of Munich, Dr. Max Von Pettenkofer, has recently given three popular lectures on hygiene, at Dresden, which have since been published, and also translated\* into English. This work, though written in a purely popular style, yet contains much scientific information, which will be new to all, except, perhaps, a very few, of the medical men and scientists of this country. The chapter on ground-air is that which is of

\* The Relations of the Air to the House we Live in and the Clothes we Wear. By Dr. Max Von Pettenkofer. Abridged and Translated by Augustus Hess, M.D. London: Trübner, Ludgate-hill. 1873.

most interest to medical men, of whom, we presume, there are few who have not become more or less acquainted with Pettenkofer's researches on the propagation of typhoid fever and cholera by means of underground-air. He remarks that organic matter decays much more rapidly in loose soils than in stiff clays. The Belgian chemist, Louis Creteur,<sup>a</sup> had to disinfect the pits which contained the bodies of those slain at and near Sedan. He found that in the rubble, chalk, and other light soils, the bodies had mouldered away, but they were in a wonderful state of preservation in the heavy adhesive clays. The more porous the soil is the more rapidly organic matters decay therein, and the more readily the circulation of air and water proceeds. Such a soil is, therefore, the most abundantly inhabited by the lower forms of life. Pettenkofer shows that in these loose soils, and, indeed, in the earth generally, there is a large quantity of air usually richer in carbonic acid than the air above the ground, and that the underground-air is affected by the currents, temperature, &c., of the above ground-air. A strong wind playing upon the surface of the ground, outside a house, will sometimes force the gases contained in the ground into the interior of the adjacent houses. In this way, according to Pettenkofer, underground-air may be the means of introducing the contagia of certain zymotics into our dwellings:—

“ Remarkable testimony as to the permeability of the ground, and of the foundations of our houses, has been given by gas emanations into houses which had no gas laid on. I know cases where persons were poisoned and killed by gas, which had to travel for twenty feet under the street, and then through the foundations, cellar-vaults, and flooring of the ground-floor rooms. As these kinds of accidents happened only in winter, they have been brought forward as a proof that the frozen soil did not allow the gas to escape straight upwards, but drove it into the house. I have told you already why I take frozen soil to be not more air-tight than when not frozen. In such cases the penetration of gas into the houses is facilitated by the current in the ground-air caused by the house. The house, being warmer inside than the external air, acts like a heated chimney on its surroundings, and chiefly on the ground upon which it stands, and the air therein, which we will call the ground-air. The warm air in the chimney is pressed into and up the chimney by the cold air surrounding the same. The chimney cannot act without heat, and the heat is only the means of disturbing the equilibrium of the columns of air inside and outside the chimney. The warm air inside is

<sup>a</sup> Creteur on the Hygiene of the Battle-Field. Paris: 1872.



lighter than the cold air outside, and this being so, the former must float upwards through the chimney, just like oil in water. It continues to do so as long as fresh cold air comes into its neighbourhood from outside. As soon as we interrupt this arrival, the draught into the chimney is at an end. Any other way of looking at the action of chimneys leads to erroneous views, which have many times stopped the progress of the art of heating and ventilating.

"Thus our heated houses ventilate themselves not only through the walls but also through the ground on which the house stands. If there is any gas or other smelling substance in the surrounding ground-air, they will enter the current of this ventilation.\* I have witnessed a case in Munich, where not the least smell of gas could be detected in the street, but a great quantity of gas found its way into the ground-floor room of a house where no gas was laid on. In another case the gas always penetrated into the best heated room and produced an illness of its inmates, which was taken for typhoid fever.

"The movement of gas through the ground into the house may give us warning that the ground-air is in continual intercourse with our houses, and may become the introducer of many kinds of lodgers. These lodgers may either be found out, or cause injury at once, like gas; or they may, without betraying their presence in any way, become enemies, or associate themselves with other injurious elements, and increase their activity. The evil resulting therefrom continues till the store of these creatures of the ground-air is consumed. Our senses may remain unaware of noxious things, which we take in, in one shape or another, through air, water, or food.

"We took rather a short-sighted view all the while, when we believed that the nuisances of our neighbours could only poison the water in our pumps; they can also poison the ground-air for us, and I see more danger in this, as air is more universally present, and more movable than water. I should feel quite satisfied if, by my lectures, you were convinced of this important fact, if of none other.

"England has given proof how the public health can be improved, by keeping the soil clean through good drainage, abolition of cess-pools, and abundant water supply. It would carry me too far if I were to analyse now to which of these measures the lion's part belongs; I should have to enter upon many controversies, which I have no time to fight out in this place; but this is my conviction, which I want to impress upon you, that cleanliness of the soil and diminution of organic processes in the ground of dwelling-houses, are most essential.

"Many have considered these processes, and their effects on the

\* I believe that there is great protection in this respect for houses in England by the system of areas.—TRANSLATOR.

ground-air, to be a mere hypothesis. This view lies now behind us, and facts have been found proving their reality. Stimulated by the investigations of Huxley and Hackel, further researches have followed, and shown that not only at the greatest depth of the sea, but also in every porous soil, there are everywhere those beginnings of organic life, belonging neither to the animal nor vegetable kingdom, mucous formations, which are called Moneras and Protistes. When I wrote my part of the report on the cholera in Bavaria, in 1854, I pointed out already, that the air not less than the water in the soil, ought to be drawn into the circle of experimental investigations. Neither others nor myself acted at once upon my suggestion, and it is only during the last eighteen months that I have examined the ground-air in the rubble-soil of Munich, regularly twice a-week, for its varying amount of carbonic acid. The results are surprising, and for the future I shall have to trouble others and myself not only with ground-water, but also with ground-air.

"The place where the examination of the ground-air of Munich is being carried on is rubble, without any vegetation, and the carbonic acid increases with the distance from the surface. Agricultural chemistry has been aware, for a long time, that a clod of arable earth which is rich in humus, is a source of carbonic acid, but no one expected that, at times, so much carbonic acid should be met with in sterile lime-rubble. A few feet under the surface there is already as much carbonic acid as in the worst ventilated human dwelling-places.

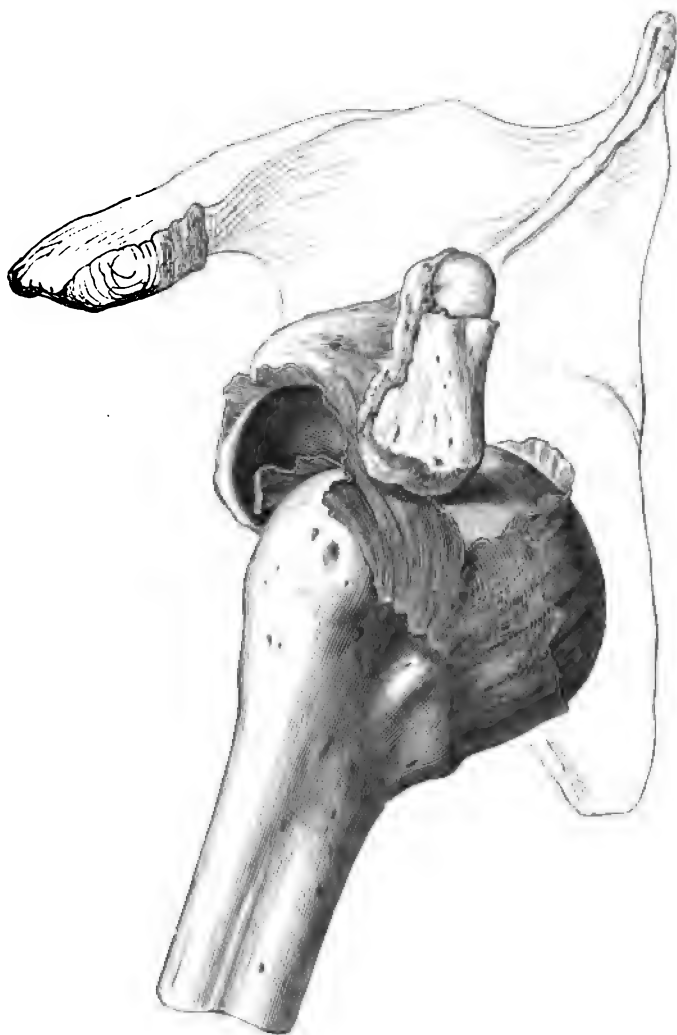
"I have found that the quantity of carbonic acid is smaller at 58 inches than at 156 inches throughout the year, the months of June and July excepted, when an inverse proportion arises. But then there begins also, in the lower stratum, a considerable increase, so that the upper stratum soon finds itself behind again. This large quantity of carbonic acid in the ground-air of Munich has been far surpassed in Dresden. Examinations have taken place in this town under the authority of the Central Board of Public Health. Professor Fleck's diary proves that, at least at that spot where his examinations took place, the quantity of carbonic acid was in winter already nearly twice as great as in Munich in the month of August. I might become jealous of Dresden, but we must often, in life, put up with being left behind, although we had the first start, and I have no choice left but to resign myself.

"The presence of carbonic acid in the soil and its periodical motion, are for the present a bare fact. Other places, with different soils, must be examined under varying circumstances, and for longer periods, before an explanation can be attempted."

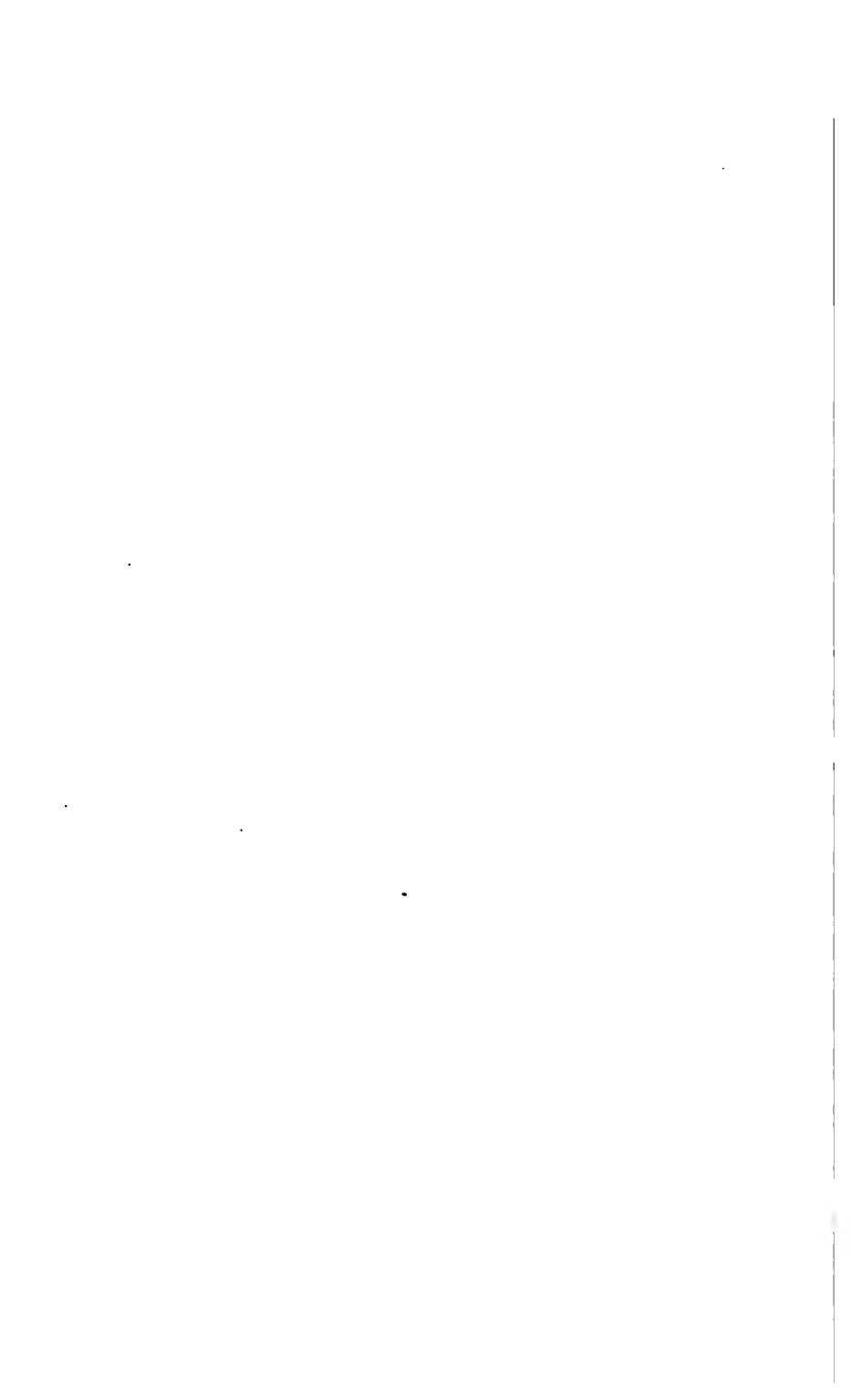
According to Pettenkofer, the air in our houses becomes unwholesome when the carbonic acid in it, provided it be

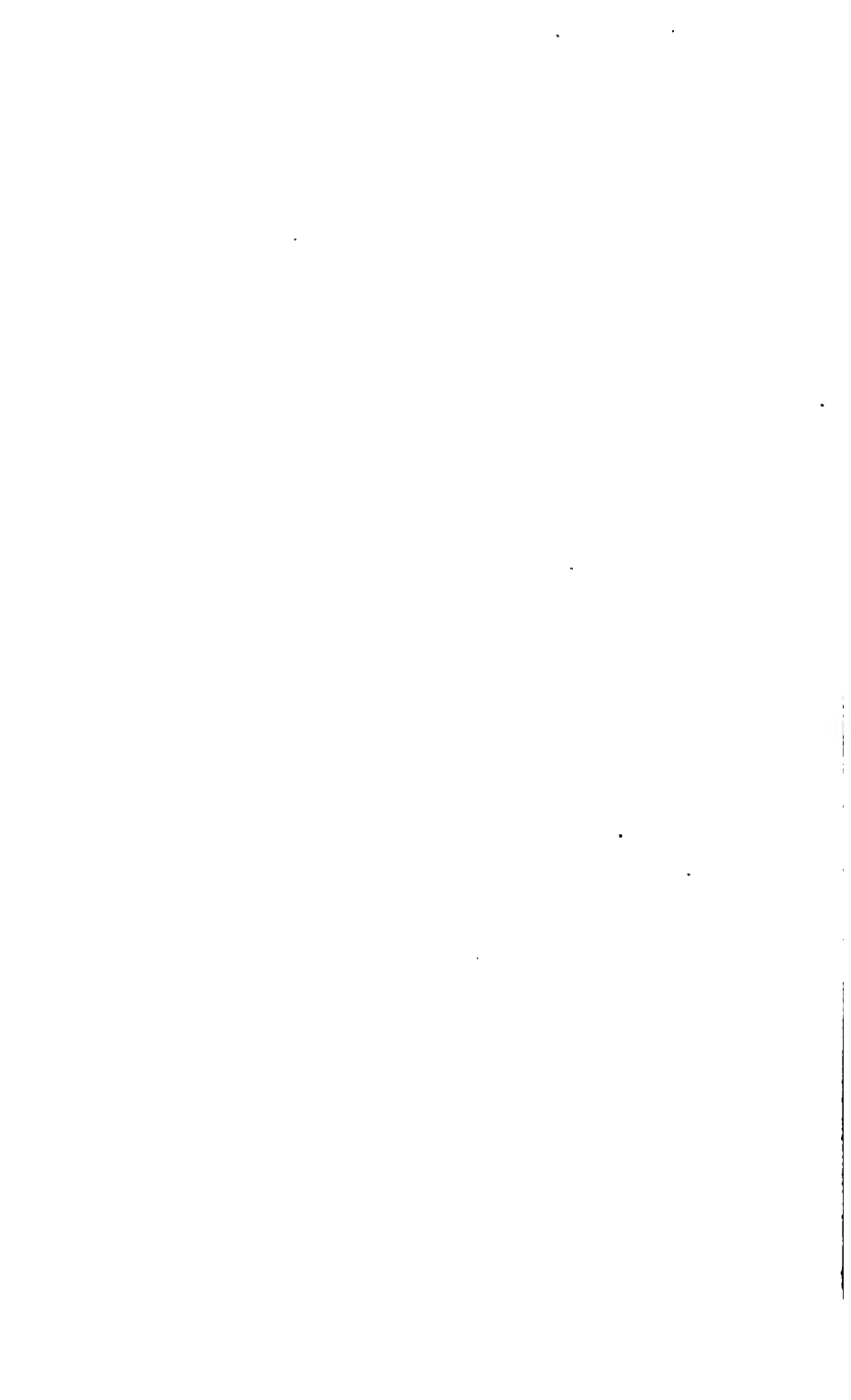
derived from the respiration of animals, rises from the normal proportion of 4 parts in 10,000 to 1 part in 1,000. The experiments of Dr. Angus Smith and Dr. Hammond have shown that the organic matter in the air, which increases in proportion to the amount of carbonic acid, is by far a more deadly impurity than the gas. Dr. Alfred Perry, Chemist to the Board of Health of New Orleans, has shown\* that not only carbonic acid and ammonia, but also solid and albuminous substances, are evolved during the decomposition of street and gutter filth. These products "are, for the most part, when breathed in large proportion, fatal to life; and, in small portions, diminish the bodily vigour of persons who are well, and aggravate and prolong diseases which already exist." According to Dr. Perry, the air of certain parts of the city of New Orleans, where yellow fever prevailed, contained per 1,000,000 cubic metres 110.31 grams of ammonia, and 166.66 grams of albuminoid nitrogen. The latter number, if multiplied by 11, would probably give the actual amount of animal and vegetable matter, chiefly in a putrescent state, floating in the atmosphere of the streets and rooms of New Orleans, and of many other towns too. Whilst on the subject of the hygiene of houses, let us refer to the defective water-closet accommodation which prevails even amidst the middle and lower classes in these countries. In the case of the houses of the well-to-do sections of society, the water-closet is often in a very insanitary state; and in the dwellings of the poor the condition of the necessary out-offices is, as a rule, extremely objectionable, both from a moral and sanitary point of view. In the great majority of cases which have come under our notice, the *petits* were in proportion to from 8 to 20 families. A sensible article on the relation which faulty water-closet accommodations bear to the diseases of women, appears in the *Philadelphia Medical Times* for August 23rd, 1873. It is contributed by Dr. William Goodell. He refers to the defective water-closet accommodation which prevails in the United States many of the diseases which commonly affect women. He advocates the construction of those essential adjuncts to every civilized dwelling in such a manner as would render them warm, dry, and free from draughts and foul air—private and easily accessible water-closets, constructed so as to induce females to use them more regularly than they do at present, because those places are cold, too public, and often too remote.

\* Annual Report of the Board of Health. New Orleans: 1872.



DR. BENNETT on Dislocation of the Shoulder ; Fracture of Coracoid Process.







DR. BENNETT on Malformation of the Clavicle.

## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

GEORGE H. KIDD, M.D., President.

R. W. SMITH, M.D., Secretary.

*Congenital Malformation of the Clavicle, &c.*—DR. E. H. BENNETT exhibited a congenital malformation of the clavicle and scapula. The specimen was obtained in the dissecting room, and was consequently without history. Slight deformity of the clavicle was observed before the dissection of the subject was commenced, which led to the suspicion that the case was one of united fracture, the seat of the supposed fracture having been between the conoid and trapezoid ligaments. The two clavicles were the same length, and similarly curved. On raising the attachments of the trapezius muscle from the left shoulder, the acromial extremity of the clavicle was found to be bifid, and its articulation with the scapula double. Viewed from above, the bone was seen to be perfectly normal from the sternal extremity as far outwards as the conoid tubercle; but here its upper surface was interrupted by a V-shaped elevation, such as might have resulted from the irregular union of a doubly oblique fracture, with elevation of the outer fragment. From the posterior border of the bone, beside the irregularity on its upper surface, the second extremity, broader and flatter than the normal one, extended outwards and backwards, and articulated with the spine of the scapula. This articular surface occupied a little more than an inch of the upper border of the spine of the scapula, and was separated from the normal acromial articular surface by an interval of half an inch. All the accessories of a diarthrodial joint were present in its formation, viz., articular cartilages, synovial membrane, and capsular ligament. The fibres of the trapezius muscle were normally attached to the spine of the scapula and to the acromial extremity of the clavicle, and consequently covered the abnormal extremity of the bone and its joint. The conoid



and trapezoid ligaments were larger than normal, and an imperfect joint existed between the under surface of the clavicle and the coracoid process between them; the conoid was the more excessively developed of the two ligaments, its enlargement apparently resulting from its extensive attachment on the abnormal extremity of the bone. The coracoid process of the scapula presented at its root a crest of bone which served to attach the additional fibres of the conoid ligaments. No ossification had occurred in these ligaments further than such an amount as served to mark their attachments most distinctly. The clavicle, in the space between the ligamentous attachments, showed no trace of fracture on its surface; and a section made horizontally through the extremities and the adjoining portion of the shaft, showed that no fracture had ever taken place. No trace of any symmetrical deformity existed on the opposite side of the body, nor were any other congenital malformations noticed in the body. The complete development of the abnormal extremity of the bone, its position with regard to the coraco-clavicular ligaments, and the character of the joint between it and the spine of the scapula, all showed that the deformity was congenital, although at first sight the absence of symmetrical deformity, with some appearances similar to those of united fractures, seemed to oppose this view.

The greatest difficulty which the specimen presented, regarding it as a congenital deformity, was the absence of any parallel development in the animal kingdom, which might serve to explain its signification.—*February 8, 1873.*

*Necrosis of the Tibia.*—MR. TYRRELL said he was indebted to his colleague, Dr. Hayes, for the opportunity of showing a specimen of necrosis of the entire shaft of the tibia, the result of acute periostitis. The girl from whom it was taken was in the enjoyment of perfect health six weeks ago. About that time she complained of a slight pain in the ankle, and was seen by a distinguished surgeon, who prescribed some local application. She did not return to him, but placed herself under the care of a general practitioner, and remained under his treatment for a fortnight. She was then admitted under the care of Dr. Hayes to the Mater Misericordiæ Hospital, suffering from excessive pain in the limb, which was greatly swollen, tense, bright, and shining. A high degree of fever accompanied the attack, which was evidently one of very acute diffuse periostitis. They made several incisions, which were carried down to the bone. No pus came from the incisions at first, but, in a few days, there was a free and rather copious discharge of healthy-looking matter. She did not, however, improve; the condition of the limb became such that it was considered necessary to resort to amputation, and the limb was accordingly amputated that morning by Dr. Hayes.

It would be seen that the periosteum was detached from the entire of

the tibia, up to near the head of the bone, but the knee-joint was perfectly safe. This, however, could not be said of the ankle-joint. There was erosion of the astragalus, and the articular surface of the tibia was in a state of necrosis. As the knee-joint was unaffected, it was hoped that two or three inches of the leg might be saved. The amputation was planned, so as to amputate either at the upper third of the leg, or at the knee-joint, if necessary. Finding that the periosteum was detached from the tibia throughout its entire extent, the incision was prolonged, and the limb was severed at the joint.—*March 22, 1873.*

*Ossification of the Choroid.*—MR. WILSON said he had to exhibit a specimen of this affection, taken from a girl, aged sixteen. She was born with a blind eye; the other eye had perfect vision, and never gave her any trouble until lately. In May last the blind eye became painful, and the pain continued, and went into the sound eye. Latterly she was unable to bear light, or read, or go about. She was confined to a dark room, and suffered intense agony in the healthy as well as in the diseased eye. Under these circumstances she was sent to him from the country, and he at once proceeded to enucleate the diseased eye. It presented an example of microphthalmus. The entire globe was but half the size it should be; its diameters were nearly equal, being about  $\frac{3}{4}$ th of an inch either way. The cornea was very opaque, and was adherent to the iris. The pupil appeared to be obliterated, but he had never been able to make a complete examination, owing to the intolerance of light, the great lacrymation, and the excessive pain which the girl suffered. After the removal of the diseased eye the girl got better, and left the hospital. On opening the eye he found the choroid, in certain places, detached from the retina; about one-fourth of its extent had been turned into bone. This was no uncommon occurrence. He had shown specimens where the entire eye was filled up with a cup of bone, with a hole for the optic nerve to come through. On opening up the choroid, he came on the retina, which was perfectly white, divested of all vessels which he could trace, and divested, also, of the usual folds which were characteristic of the foetal retina. Inside the retina there was a soft white body, which, he believed, represented the vitreous humour, but largely degenerated, and probably some new material added to it. He never saw a substance of that kind before. The crystalline lens was quite opaque, as if boiled, but its position was the usual one in front of this substance, which was probably a representation of the vitreous humour. The iris was perfect; the ciliary processes quite perfect; the lens was somewhat different in shape from what it should be, and it was degenerated to some extent. The bony structure did not extend to the ora serrata. The peculiar interest in the case consisted in the turning of a portion of the structure into bone, and a degenerated thickened condition

of the retina, which, as a rule, was exceedingly thin. He presumed this was an eye, from about the sixth or seventh month; that, from some cause or other, ulceration of the cornea occurred *in utero*; an abscess was formed and burst; and there was then an immediate arrest of development of all the structure of the eye.—*March 22, 1873.*

*Aortic Aneurism and Capillary Bronchitis.*—DR. FOOT exhibited a specimen of double aneurism of the aortic arch; the first aneurism was a fusiform dilatation of the root of the aorta, the second a saccular aneurism of the size of a walnut, springing from the convex side of the transverse portion of the arch. The man from whom the specimens had been taken was a shoemaker, aged forty, who was admitted into the Meath Hospital 17th March, 1873, and had been complaining of cough and expectoration since Christmas; he had never suffered from pain. The symptoms he exhibited were entirely those of capillary bronchitis, with the exception of a peculiar, roaring, tracheal noise, and a difficulty of keeping the horizontal position greater than ordinary pulmonary embarrassment would occasion. When placed on his back in bed for the purpose of examination of the chest, he would jump up suddenly, declaring he could not remain in that position; he could lie on either side. An intermitting tricuspid murmur was the only abnormal sound afforded by the heart, and this was much obscured by the bronchial râles. There was slight increase of transverse dulness over the aortic region of the sternum. The venous turgescence and regurgitation, arising from the over-distended condition of the right ventricle, was very obvious in the right side of the neck. The mode of death, which occurred on 23rd March, was that usual in suffocative catarrh, by gradual coma. A musical systolic murmur was heard shortly before death.

The body, examined twenty-two hours after his decease, presented the thoracic deformity frequently observed in shoemakers—a prominence of the ribs and costal cartilages on a level with the nipples, a concavity at the lower portion of the gladiolus, and a cocking out of the xiphoid appendix. The lungs were emphysematous in front, congested behind, and in a state of general inflammation as regarded the bronchial ramifications. The pericardium, very much congested externally, was thin, and contained no fluid; the ascending portion of the aorta was dilated, stiff, and rumpled under the finger. Two-thirds of the aneurismal dilatation of the root of the aorta was intra-pericardial, and had by lateral pressure on the left side displaced the pulmonary artery to the left, and on the right side had encroached on the superior cava; the venous turgescence and regurgitation arising from the over distended condition of the right ventricle from the condition of the lungs had been aggravated by this lateral pressure. The sigmoid valves held water, and did not participate in the advanced degrees of the atheromatous process

which the early portion of the aorta presented. The left ventricle was hypertrophied to a moderate extent, and slightly dilated. The second aneurism was situated between the innominate and left carotid arteries; it was intimately united to the front of the trachea, and appeared to have caused the peculiar roaring and churning noise by its obstruction of the profuse secretion of the bronchial tubes. The roaring sound was not the stridor of aneurismal pressure; the sac impinged upon the most convex and strongest portion of the tracheal hoops, and though inseparably adherent, had produced no permanent flattening, ulceration, or morbid appearance on the interior of the windpipe, but no doubt during life exercised considerable pressure. Neither aneurism had given way, nor exhibited any tendency to do so. The larger fusiform dilatation contained a loose clot, the contents of the saccular aneurism, being out of the axis of the blood current, presented some laminated coagula. The interior of the fusiform aneurism was roughened with sharp spiculæ of calcified atheroma. The right auricle and ventricle were full of cream-coloured coagula, firmly adherent to the walls of the cavities; the left auricle was empty; the left ventricle contained a small quantity of black fluid blood. The liver weighed 54 ozs., and was normal in its details; the gall bladder was nearly empty; the kidneys, each weighing  $5\frac{1}{2}$  ozs., also appeared healthy; the extremely small spleen weighed  $1\frac{1}{2}$  ozs. The stomach was very capacious, and, as well as the small intestines, was greatly inflated. He had during life suffered much from flatulence.—*March 29, 1873.*

*Pericarditis.*—DR. HAYDEN said the specimens he exhibited were of some interest, because of the long history which he happened to possess of the case. On the 5th of February, 1872, a labouring man of temperate habits, fifty-five years old, was admitted to the Mater Misericordiæ Hospital. He was then suffering from bronchitis, cough, and great debility. He stated that twenty years previously he had rheumatic fever, and that subsequently he was subject to a winter cold, and five years before the date of his admission to hospital he began to suffer from dizziness in the head, and two weeks prior to that date he began to experience extreme weakness. On examination, Dr. Hayden found clear evidence of emphysema of the lung and aggravated bronchitis. The pulse was 72, quite regular, and soft. The precordial dulness was almost entirely abolished; there was no distinct cardiac impulse to be felt; the point of apex pulsation, as determined by maximum intensity of the sounds, was in the left nipple line. Over the lower part of the sternum a systolic bellows murmur was heard with greatest intensity, but it was audible over the entire front of the chest, and transmitted into the arteries of the neck; the second sound was accentuated. The condition of the man underwent improvement under ordinary treatment—tonics, stimu-

lants, and nutritious diet—and he left hospital after a few weeks, much improved. On the 27th February, this year, he was re-admitted. He was suffering, as before, from aggravated bronchitis, and there was great dyspnoea. He was unable to lie down in bed. The pulse was regular as before, soft, and visible at the wrists. There was a systolic murmur at the lower part of the sternum, as in the first instance; it was audible likewise in the arteries of the neck; but there was no second sound to be heard anywhere, and no diastolic murmur. The apex of the heart had undergone displacement, as previously noticed.

On the 6th of March another phenomenon was developed. There was now a loud “to and fro” friction sound, audible over the entire precordium; it was unaltered in rhythm in all positions of the man’s body. On the 12th of March he succumbed, manifestly from bronchitis and effusion into the pericardium. The lungs were found, on *post-mortem* examination, to be emphysematous, enveloped in a dense false membrane of old formation, and adherent to the walls throughout. There was a great deal of congestion of the posterior portion of both lungs. In the pericardium there were six or eight ounces of fluid. The rings of the trachea were ossified. The pericardium was not adherent to the heart, but it presented a good example of the villous condition of the surface from recent pericarditis. The entire surface of the heart, with the exception of the apex, was covered with a thick layer of villous lymph; the anterior surface of the apex alone was smooth.

Dr. Hayden called particular attention to this, as confirming an observation made by Professor Law, that in cases of this kind the apex of the heart was usually smooth, owing to its repeated impaction against the chest-wall in systole. The heart was considerably enlarged, and, with the pericardium, weighed  $23\frac{1}{2}$  ounces. The left ventricle, was considerably hypertrophied, being  $\frac{3}{4}$  of an inch thick towards the base. The mitral valve was competent, but the aortic valves were rolled up and calcified, presenting rough and nodular masses towards the axis of the orifice, and admitting of regurgitation from the aorta. From the line of the posterior and left segment of the aortic valve, an ossific plate extended to and involved that of the corresponding segment of the mitral, but did not affect the principal portion of the valve or impair its competency.

Dr. Hayden observed that this case was of interest, with regard to the presence of an exceedingly well-pronounced second sound at the base thirteen months before death, whilst the condition of the valves would lead one to the conclusion that the disease must have been of longer duration. He thought the sound heard was derived from the pulmonary artery. The muscular fibre of the heart was found to be in the first stage of fatty degeneration; the striation had almost entirely disappeared, and in place of the proper tissue there were found minute transparent dark outlined granules disposed in transverse lines. Dr. Stokes, many years ago.

remarked the absence of diastolic murmur at the base in many cases of fatty heart, with systolic basic murmur, where, nevertheless, the general evidence of valvular inadequacy at the aortic orifice, including visible pulsation of the arteries, existed. This might be explained by the fact, that the aorta was in a state of advanced atheromatous change; the vessel was also dilated, and it was readily conceivable that where its resiliency was impaired, although there might be reflux, it would not possess sufficient re-acting force to develop a murmur. As to the pericarditis, he had said that the double friction sound was distinctly audible in all portions of the body, and respiration did not influence it. In most cases of pericarditis he thought this a very valuable sign in the differential diagnosis of pericardial *frottement*, that during a full respiration it became intensified, whereas endocardial murmurs are not so modified. It frequently happened that, though the pseudo-murmur be absent during expiration, it becomes audible during the next inspiration; but under two circumstances it fails, namely, where the lungs were permanently inflated, as in emphysema, or adherent to the chest, or the pericardium, and where the heart was so much hypertrophied as to displace permanently the edges of the lungs.—*March 29, 1873.*

*Renal Calculus.*—DR. GERALD YEO exhibited a kidney containing a large branched calculus, which was removed from the body of an aged female, who had died in the Hardwicke-Hospital of typhus fever, with pulmonary complication. The right kidney was large, the cortical part being pale and slightly fatty. The parenchyma of the left had almost disappeared, the pelvis being enormously dilated, and the calices distended into numerous sacs, containing a very foetid, whey-like fluid. The entire organ was surrounded by a thick cushion of fat. Within the dilated pelvis was a large branched calculus, which measured three and a quarter inches in length, and in shape resembled, in a most striking manner, that of a pig. On section it was found to consist of a glistening white, central part, covered by a dull brown external layer, about one-eighth of an inch in thickness. An accurate chemical analysis, made by Mr. Theodore Stack, showed the external part to consist of carbonate and phosphate of lime, and a small amount of organic matter; it might be called bone-earth. The central part was composed of carbonate and phosphate of lime, and ammoniaco-magnesian phosphate, *i.e.*, fusible calculus, mixed with chalk.

Dr. Yeo thought this chemical composition was not exactly in accordance with that usually accepted as the most common in renal calculi. He said the kidney showed very clearly the earlier stages of increased growth of fat around it, depending upon chronic renal irritation, a very advanced degree of which had been recently exhibited to the Society by Mr. E. Hamilton.—*March 29, 1873.*

*Disease of the Knee-Joint.*—MR. TYRRELL exhibited the component parts of a knee-joint, which he had removed by resection. The patient was a girl, sixteen years of age, who had been in many of the hospitals in Dublin, labouring under pulpy degeneration of the synovial membrane. She came under his care about three months ago. The leg was then perfectly useless, and hung, like the handle of a flail, from the thigh; there was but little pain, but considerable swelling and enlargement of the joint. Mr. Tyrrell, considering that in cases such as these, where the bones were not primarily diseased, the operation of resection offered the prospect of a good result, determined upon adopting this mode of treatment, and on Wednesday last he opened the joint, and exposed by a single transverse incision the articular ends of the femur and of the tibia. The cartilage of incrustation was entirely removed from the end of the femur, and also from the tibia and patella. The synovial membrane was greatly thickened, and had undergone the gelatinous or pulpy degeneration described by Sir Benjamin Brodie. After the operation, the limb was put in the plaister-splint described by Dr. Heron Watson of Edinburgh. The case, so far, was doing remarkably well.—*March 29, 1873.*

*Fracture of the Cranium and Clavicle.*—DR. ORMSBY brought before the meeting the case of a man, who had been admitted into the Meath Hospital on Wednesday last, 26th, at three o'clock in the morning. On the previous day, about twelve o'clock, he was descending into the hold of a steamer by a ladder, when his foot slipped, and he fell a depth of sixteen feet, his head and shoulder coming in contact with a cask. When raised up, he seemed greatly stunned, but, after a short time, spoke a few words. He vomited a good deal, and when seen shortly after the occurrence of the accident, was supposed to be labouring under the effects of intoxication.

When admitted into the hospital, he had cold extremities, stertorous breathing, dilated pupils, and was quite unconscious. He had convulsions on the left side, while the right was seemingly paralyzed; the right pupil more dilated than the left, and the pulse was over 100. He died thirty-seven hours after the receipt of the injury.

On examination *post-mortem*, a large effusion of blood was found over the occipital and parietal bones. There was a similar effusion beneath the calvarium, and a fracture was discovered running from the occipital bone through the lambdoidal suture into the right parietal. The inferior surface of the right anterior lobe of the brain was lacerated, and the middle cerebral artery ruptured. The left clavicle was broken at its sternal end.

The points of most interest in the case were, that the case was looked upon at first as one of intoxication, that the man was conscious for four

hours; that he was convulsed on the left side, and paralyzed on the right, and that the pupils were unequally dilated.—*March 29, 1873.*

*Anchylosis between the Femur and Tibia.*—PROFESSOR R. W. SMITH laid before the Society, at the request of Dr. Maconchy (Surgeon to the Co. Down Infirmary), an example of complete osseous union between the femur and tibia, after excision of the knee-joint. A full account of the case, and of the morbid appearances presented by the portions of bone removed, has been published in the *Dublin Quarterly Journal*, Vol. xlv., p. 335, 1868. The man was admitted in November, 1867, and discharged in March, 1868. From this time nothing was heard of him until he presented himself at the Infirmary (after a walk of ten miles), on April 24, 1871, suffering from strumous disease of the testicle; at this time he had perfect use of the limb, and could walk several miles with the assistance of a high-heeled boot. He was discharged on July 28, 1871, and was again admitted in January, 1872, suffering from tubercular disease of the mesentery, of which he died on May 5th, 1872.

The specimen before the Society affords a good example of complete osseous union between the femur and tibia, and remaining perfectly firm after a very prolonged maceration. The bones (which were very fatty) had slipped somewhat during the process of union, from their proper relative positions, the tibia and fibula having glided inwards and backwards to a certain extent, without, however, at all impairing the utility of the limb.—*March 29, 1873.*

*Spindle-celled Sarcoma of the Dura Mater Cerebri.*—DR. A. W. FOOT exhibited an intra-cranial tumour of this nature, springing from the dura mater lining the ethmoidal fossa, and projecting upwards against the inferior surfaces of the anterior lobes of the brain. The subject from whom the specimen had been taken was a dissipated and much debilitated man, aged sixty, subject to occasional attacks of epilepsy for the last twenty years, and who had sought admission into the Meath Hospital for recent want of muscular and co-ordinating power in both arms and legs.

He was admitted at 11 a.m., 3rd April, 1873, and he died at 11 p.m. on the 4th. His wife was at the time of his admission a patient in the hospital, and his son was put out to make a vacancy for the father. He was unable to walk across the hall without support; he could not stand alone, or for a moment with his eyes shut; he complained of "numbness in the feet and hands;" however, he was tested, and found sensible to pain and to differences of temperature in these parts; he was clumsy and awkward with his fingers, could not pick up anything off a flat surface; for example, a pencil-point protector off the cover of a book, and could not button or unbutton his clothes. Though he could give a



fair squeeze with his hands, yet he was so awkward in finer manipulations with them, that he could not hold the dynamometer properly, and perhaps it was on this account that he only registered 20 kilometres with the left, and 7 kilometres with the right hand. He made no complaint of his sight, and appeared to see quite well. He had been drinking hard, according to his usual custom, for a week before admission, had caught cold, and died, 36 hours after admission, of sudden effusion into the bronchial tubes.

A tumour, in size and shape not unlike a Normandy pippin, was found attached to the dura mater, investing the cranial aspect of the ethmoid bone, the olivary process, clinoid processes, and lesser wings of the sphenoid bone. The dura mater, when ripped up off these parts, bore the tumour sessile on and firmly adherent to its cerebral aspect, except in a few places where the fibrous membrane had been frayed through, and where the tumour came in contact with the subjacent bone. The tumour was reddish-white in colour, rather soft and friable, granular, indistinctly lobulated, juiceless; above, it had imbedded itself in, but was nowhere adherent to the over-lying brain, which was softened where in immediate contact with the growth. The tumour was neither calcified nor pigmented; the pituitary body was intact within its capsule of dura mater; the infundibular process from the third ventricle was applied against the posterior rounded border of the tumour; anteriorly the growth extended to the median plate of the ethmoid, on which two cristæ, one behind the other, with an intervening notch, were developed; laterally the disease spread on each side to the entrance of the Sylvian fissures. The chiasma was upraised from its bed, the left optic nerve was pushed outwards, the right traversed part of the tumour; the olfactory processes could not be recognized. There had been no lesion of sight or smell observed or complained of during life. Histologically the tumour was composed of delicate, spindle-shaped cells, with, in parts, very numerous corpora amylacea, and many large mother cells. There was no other visceral or lymphatic deposit in the body. The brain and spinal cord, removed together, weighed  $52\frac{1}{2}$  oz. Beyond an increased amount of cerebro-spinal fluid there was no obvious anomaly in the nervous centres. The liver, weighing  $52\frac{1}{2}$  oz., had the inferior portion of the right lobe fissured or deeply scored posteriorly, and across it, in front, passed a broad white seam. The spleen weighed  $11\frac{3}{4}$  oz., and there were in its vicinity three supplementary spleens, one the size of a large cherry, in the gastro-splenic omentum, another the size of a red currant near it, and a third, still smaller than the last, beside it. The capsule of the main spleen was relaxed and wrinkled, and the organ seemed, from its flabby appearance, to have been subjected to much greater distension than it presented *post-mortem*. The kidneys did not appear in any way diseased.—April 5, 1873.

*Disease of the Knee-Joint.*—DR. HAYES exhibited a specimen of a diseased knee-joint, which, on the 10th of last December, he removed from a young female patient in the Mater Misericordiæ Hospital. She stated that five years since, when ten years of age, she noticed a swelling of the left knee, which did not, however, give her any particular inconvenience for about a year. Then she began to suffer pain, which, during the year following, increased to such a degree, especially when walking, that marked lameness resulted. A year later (three years from the commencement of the swelling), startings of the limb, indicative of ulceration of the cartilages occurred; then the knee became more than semi-flexed, muscular contraction took place, and soon fibrous ankylosis occurred. An abscess formed over the inner condyle of the femur. This opened of itself, and for some months discharged purulent matter freely.

Last May the girl applied at the Mater Misericordiæ Hospital, and, at that time, there was the opening of a sinus over the internal condyle, and through it a probe could be passed across the anterior surface of the femur. The patella was found to be firmly fixed to the anterior aspect of the outer condyle. Forcible extension of the leg was tried, but they were not able to extend the limb materially, owing to the attachment of the patella. He directed the patient to go to the country, endeavour to regain health and strength; and told her that when she was in a better condition he would resect the joint. She returned to hospital last November, and after consultation with his colleagues, resection was determined upon. Dr. Hayes performed that operation only, because the girl's father objected to what he termed the mutilation of his daughter; he would consent to anything short of the amputation of the limb. The fact that the girl had not been lame at first, indicated that the disease, probably, originated in the bones. This was, of course, more unfavourable to success in resection, than if evidence indicated the commencement of the disease in the soft textures. A transverse incision laid open the joint readily, and exposed the parts. There was a mass of diseased tissue, the result of inflammation extending from the bones into the articulation. The patella was attached by strong fibrous tissue to the surface of the outer condyle of the femur.

On making the first section of the femur (he was very anxious to preserve the lower epiphysis), that bone appeared to be perfectly healthy, and he was rather surprised to see this, for the sinus, extending above the inner condyle, had led him to think it was diseased. However, this section would not allow the extension of the limb; the ham-strings being very tense, and a large removal of bone became necessary. Therefore, he made a second section of the femur, but was still unable to extend the limb; but this section disclosed the important fact that there was disease in the interior of the bone, and on making further examination, evidence

was found of a chronic tubercular abscess in the lower portion of the femur. The indications of acute disease were not present, but the remains of previously existing inflammation rendered necessary the removal of the softened tissue by the gouge. There were two abscesses, or rather tubercular deposits in the head of the tibia, but this bone was in a more healthy condition than the femur; the gouge was freely applied to it; the medullary canal of the femur, and also that of the tibia, were opened, and had Dr. Hayes been free to perform amputation through the lower portion of the thigh he would have done so. The leg could now be extended, and the patient was put to bed. During the latter part of the day hæmorrhage occurred, and it became necessary to open the whole wound, as the blood welled from the bones where gouged. The only hemostatic that produced an effect was the colloid styptic of Dr. Richardson of London.

The case had since gone on very favourably; but about a month since, he found that a portion of the wound had not healed, and on examination, he detected a small piece of bone. When this was removed cicatrization had gone on without interruption. Very fair fibrous union now existed, and he hoped osseous union would finally be established.—*April 5, 1873.*

*Ossification of Crystalline Lens.*—MR. WILSON exhibited a specimen of the crystalline lens of the human eye turned into bone from a man, aged forty-two. He had recently shown an example of osseous degeneration of the choroid coat of the eye, which was not unfrequently met with. Degeneration of the crystalline lens into a calcareous substance was not very uncommon, but a true degeneration into bone of the crystalline lens was very rare. A man was sent to him from the country with one blind eye, and the other partially so from sympathetic ophthalmia. The entire aqueous chambers of the blind eye were obliterated, and the iris in contact with the cornea; and lying behind the pupil was a yellowish, movable body. The globe itself was soft, and on pressing it with the finger this yellowish body was seen to move up or down according to the pressure. On putting the head on one side, this body went on one side also; it was therefore floating free in the vitreous chamber, and he extracted it on Wednesday last. The posterior surface was composed of a thin shell of bone, but the anterior surface of the lens was firm, dense, and tolerably thick, occupying more than half the thickness of the lens. Between the posterior and anterior surfaces there was a small space still remaining, occupied evidently by partially soft substance.—*April 5, 1873.*

*Disjunction of the Lower Epiphysis of the Radius; Fracture of the Ulna.*—PROFESSOR R. W. SMITH presented a specimen of compound fracture of the bones of the right forearm. The injury was the result of the same

accident as that which produced the fatal fracture of the cranium in the succeeding case. The lesion was situated in the immediate vicinity of the radio-carpal articulation; a large lacerated wound existed here, upon the palmar surface of the limb, through which rather more than half an inch of the radius was protruding; it was disjoined from its epiphysis. The axis of the bone was directed forwards and considerably inwards, towards the lower end of the ulna. The radial border of the forearm presented a very striking curve, the concavity of which (supposing the arm to hang by the side) was directed forwards, while along the ulnar margin was seen an equally remarkable convexity. The hand and carpus were in the position of extreme abduction.

The dorsal surface of the limb presented equally striking features. It was curved to a great degree; the hollow of the curve (the limb being in the position mentioned above) was directed backwards. Above it faded away insensibly, but below it ended abruptly at the margin of a tumour, which, extending from the radial to the ulnar border of the limb, constituted a most striking feature of the injury, and was, of itself, diagnostic of the nature of the injury which the bones had sustained. This tumour gave to the back of the hand an elongated appearance.

The condition of affairs, disclosed by dissection, can be readily inferred from what has been already said. The radial epiphysis was found still connected to the scaphoid and lunar bones. The ulna was fractured directly above its epiphysis, and the lower fragment displaced backwards in such a manner as to form with the upper an angle salient in front. The dorsal tumour was thus constituted by the carpus, the radial epiphysis and the lower fragments of the ulna, forming one system of parts, carried backwards, and giving to the hand its lengthened appearance, and its resemblance to a luxation of the carpus in that direction. In the sulcus which marked the termination of the posterior curvature and the commencement of the dorsal tumour, the relaxed integument was thrown into transverse curved creases, whose concavities were directed downwards towards the hand. They closely resembled the crescentic folds seen above the displaced phalanx in many cases of Hey's luxation of the thumb.—*April 12, 1873.*

*Fracture of the Cranium.*—PROFESSOR R. W. SMITH brought under the notice of the Society an example of a very extensive fracture of the bones of the cranium, compound and comminuted.

The subject of this severe injury was a boy about twelve years of age. He was leaning over the parapet of a viaduct, when, stretching too far, he fell upon the road beneath, from a height of about fifteen feet. He was taken up, quite insensible, and brought to the Richmond Hospital, in the immediate vicinity of which the accident occurred. He died shortly after his arrival at the hospital, with symptoms of compression of

the brain, portions of which organ were oozing out, as it were, through an extensive lacerated wound upon the right side of the head.

The examination of the cranium, after death, disclosed a vast extent of injury. The lower half of the right frontal bone was broken into seven or eight fragments, and portions of it driven into the cerebral structure. One line of fracture ran through the external angular process, and a portion of the roof of the orbit, and from this another line of fracture extended horizontally above the orbit, taking a horizontal course, and ending in the margin of the left orbit immediately internal to the supra-orbital foramen. A third, and the largest line, passed from the external process, about two inches in front of the coronal suture, upwards and backwards to the middle line, where it joined another fracture, which conducted it backwards to the point of junction of the sagittal with the centre of the frontal suture. Its course thence was downwards and very obliquely backwards, through the right parietal bone, through the lambdoid suture and into the occipital bone.

The brain substance was in several places lacerated and thoroughly disorganized by depressed bone and effused blood, and, no doubt, also by the severity of the concussion to which the cranium was subjected.—*April 12, 1873.*

*Aneurism of the Aorta.*—DR. T. E. LITTLE exhibited a specimen of aneurism of the thoracic aorta, which had been removed from the body of a female of very intemperate habits, aged thirty-eight. A year before her death, she noticed the existence of a small tumour above the left mamma. She experienced no inconvenience from it till three weeks before her death, when, having become intoxicated, it began to enlarge rapidly, and at the same time it became the seat of continuous pain and tenderness.

A fortnight before her decease she was admitted into Sir Patrick Dun's Hospital, the symptoms and signs of aortic aneurism being unequivocal. The tumour had a vigorous systolic pulsation, but no bruit was audible over it; respiration was deficient over the left lung. Symptoms of internal pressure were singularly wanting, there being scarcely any dysphagia, dyspnoea, or cough. Some unusual symptoms, however, presented themselves, viz., unilateral sweating of the left side of the face and neck, contraction of the left pupil, and the occurrence of an herpetic eruption (presenting all the characters of a zoster) on the same side of the thorax. Before death the tumour had increased to such a size that it occupied all the space between the left clavicle and the mamma, and extended into the axilla.

On *post-mortem* examination, an aneurismal tumour (almost as large as the head of an adult), and springing from the front of the ascending portion of the arch of the aorta, was found to extend across the root of the left

lung, into the anterior and upper part of the left side of the thorax, the parietes of which were here absorbed, the first four ribs having been eaten through for a considerable extent. The part of the tumour external to the thorax had lost all traces of arterial coverings, the sac here being formed by the pectoral muscles, so that, probably, at the period of increase in the growth of the tumour, the original aneurism had then become diffused.—*April 19, 1878.*

*Transverse Laceration of the Aorta ; Hæmorrhage into the Pericardium.*—

DR. A. W. FOOT exhibited a greatly hypertrophied heart, weighing, when washed out, twenty-eight and a quarter ounces, taken from the body of a bricklayer, aged thirty, who had dropped dead in a public-house. The body was examined sixteen hours after death; rigor mortis was most intense; the trousers presented marks of recent fecal extravasation; a viscid whitish fluid oozed from the orifice of the urethra. The feet, legs, and scrotum of the corpse were œdematous; there was also some effusion of serum in the sub-cutaneous cellular tissue of the abdomen; there were sub-conjunctival ecchymoses, and blood welled from the nose over the livid and swollen face. The man "had been complaining" for three months before his death; he was of intemperate habits, and had adjourned, with some friends, after his dinner, to a public-house, where, while drinking, he suddenly fell to the ground and died. There was no history of any fight or quarrel.

The cause of death was hæmorrhage into the pericardium; the inner and middle coats of the intra-pericardial portion of the aorta were torn through, by a laceration running transversely round three-fourths of the cylinder of the vessel, the external cellular coat was stretched and frayed, and through several linear and pin-hole apertures in it the blood had forced itself out into the pericardium, at a point between the right side of the artery and the left corner of the appendix of the right auricle. Through a small nick made in the pericardium, which was bluish grey in colour, flat, not convex or prominent, nineteen and a-half fluid ounces of reddish serum were taken out with a pipette, and afterwards a jet black coagulum, weighing twenty ounces, which enveloped and concealed the heart, was removed. The epicardium was elevated and discoloured by subjacent ecchymoses in the vicinity of the rupture. The rent in the aorta was situated three-quarters of an inch above the valves; the aorta was unusually thin, and looked too small for the size of the heart; it was not dilated, nor was there a particle of atheroma, in any stage, any where visible in the vessel. The valves of the heart were each competent, though the aortic valves were thickened, and some small vegetations appeared on the auricular aspect of the anterior mitral valve. The great and general hypertrophy of the heart seemed attributable to the condition of the kidneys and of the lungs (emphysema). The kidneys weighed

nine and a-half, and seven and three-quarter ounces, and were as hard as a raw turnip; on section a glistening, semi-translucent deposit was noticeable, particularly in the inter-pyramidal portions of the cortical substance; iodine solution brought out the amyloid solution in a marked degree. The colour of the kidneys was very remarkable, and quite unlike that usually observed in the amyloid degeneration; their colour on section was purple, shading into deep crimson; this made the glistening amyloid granules more obvious. In the pyramids, especially, the hyperæmia had reached the degree called by Rokitsky renal apoplexy. The liver weighed  $73\frac{1}{2}$  ounces, was large, smooth, firm on section, round edged, and normal in shape; the gall-bladder, not distended, contained no calculi. The spleen, slaty-blue, weighed  $9\frac{1}{4}$  ounces. The urinary bladder was empty and contracted.

Dr. Foot considered that, possibly, the sudden bound of a very powerful heart, under the influence of excitement, had ruptured a preternaturally thin and fragile aorta.—April 26, 1873.

*Atrophy and Softening of the Skeleton.*—PROFESSOR R. W. SMITH detailed the following remarkable case, and exhibited the remains of the skeleton.

An unmarried female, forty years of age at the period of her decease, was admitted into one of the District Lunatic Asylums, in May, 1858, having been a short time before committed to prison as a dangerous lunatic. Nothing could be ascertained of her previous history. For a period of ten years after her admission she was able to go about, and did whatever work was assigned to her, such as sweeping rooms, washing floors, &c., and during the whole of that time made no complaint of illness or weakness of any kind.

Five years ago, however, she began to walk lame, but still made no complaint; her appetite was always good, and she rested well at night. She ceased to be able to work, and became bed-ridden for the remaining five years of her life, gradually becoming more and more enfeebled, and dwindling away in stature, until she was reduced to about two-thirds of her former height. She usually lay, during the latter portion of her wretched existence, with her head resting upon her knees. The thorax became excessively deformed, in consequence of an almost endless number of fractures of the ribs, and the thighs were bent in different directions and curiously coiled up, the bones having given way in several places. The same remarks apply to the condition of the pelvis. She died in the beginning of 1872, seemingly worn out by the obscure constitutional effects of so universal a degeneration of the osseous system.

The examination of the body proved to be most interesting, but also most laborious. The state of the internal organs may be disposed of in a few words. None of them presented any abnormal appearance worth alluding to, except the uterus, with which a few small fibrous tumours

were connected. The muscles were of a pale colour, soft and flabby. With respect to the condition of the bones, it may be stated, in general terms, they were atrophied, extremely light, and extremely fragile, and their interior contained a grumous, semi-fluid, greasy matter, not unlike that observed in them in the second stage of rickets as it occurs in children. The number of fractures which existed was prodigious: the ribs alone had been broken into more than one hundred fragments. The atrophied lower jaw was in three pieces; the bones of the pelvis and the thigh bones had given way in more than twenty places; the neck of each femur was broken. The scapulæ, clavicles, &c., were likewise broken; altogether, there were near two hundred fractures. The vertebræ were greatly atrophied, much diminished in vertical extent, and deeply excavated in front. The base of the skull and the bones of the face were cribriform, more especially the former.

The bones (when dried) were carefully weighed, with the following results:—Cranium,  $9\frac{1}{2}$  oz. Tibiæ and Fibulæ,  $9\frac{1}{2}$  oz. and 1 drachm. Bones of arms and forearms, 5 oz. and  $\frac{3}{4}$  drachm. Sternum,  $\frac{1}{4}$  oz. Clavicles, 1 drachm. Pelvis,  $2\frac{3}{4}$  oz. Vertebræ,  $4\frac{1}{2}$  oz. Lower jaw,  $\frac{1}{2}$  oz. and 2 scruples. Femora, 4 oz. and 2 drachms. Patella, 3 drachms. Ribs, 1 oz. and 3 drachms. Scapulæ, 1 oz.

The total weight of the skeleton was about  $2\frac{1}{2}$  pounds, which may be set down as one-fourth of the weight of a large child at birth. Professor Smith, having alluded to the writings of Trousseau and others, respecting the identity of mollities ossium and rickets in the adult, and to the observations of Otto, Marchand, Beyland, &c., stated that, as it was his intention to publish a memoir upon the subject, he would not longer occupy the time of the meeting upon the present occasion.—April 26, 1873.

WE have, in common with every member of our Profession in this country and abroad, to lament the death of the distinguished author of the above communication.

As we write, the mournful tidings reach us that ROBERT WILLIAM SMITH has this day passed away. Of this loss to Surgical and Pathological Science it would be impossible to estimate the magnitude. The splendid Museum of the Richmond Hospital, the researches on Fractures and Dislocations, the classical monograph on "Neuroma," and his labours as Secretary of the Dublin Pathological Society from its foundation to the present, are, indeed, for him

"Monumentum ære perennius"—

an imperishable record of industry and talent.—(October 28, 1873.)



## LESSONS FROM THE LIVES OF IRISH SURGEONS.\*

**EXAMPLES** are better than precepts, and therefore it struck me that you would be glad to learn the ways in which our great surgeons, whose names will occur daily to you in the course of your studies, attained their eminence. You will be reminded of many of them as you walk through these halls, for since the foundation of this College—90 years ago—she has always desired to perpetuate, by marble or canvas, the fame of her most distinguished members. Success among the public is not always a true test of skill or knowledge, but those who have been raised to our high places, or whose memories are here cherished, have, without exception, deserved such honours. If the saying of Dr. Gregory be true of the surgeon, namely, that “the only judges of his merit are those who have an interest in concealing it,” it must be allowed that the Fellows of our College have always acted most disinterestedly.

I have arranged in chronological order the names of some of those whose lives and labours offer useful lessons for reflection, commencing with two or three who flourished at the end of the 17th century, and ending with some whose loss is still fresh in our memories. If dates and details about some of the earlier surgeons appear dry, I trust you will bear with me—for, believe me, the more you learn of your profession, the more pride will you feel in these countrymen of ours who have done so much without any of the aids for study which are now possessed by all of us.

Allen Mullen, born about the middle of the 17th century, in the North of Ireland, was one of the ablest anatomists of the time. His account of the anatomy of an elephant burned in Dublin, in 1681, is wonderfully minute, and was quoted by Buffon and successive writers, even to Agassiz in our own day. He communicated this paper to the Royal Society through Dr. (Sir) Wm. Petty, Surveyor of Ireland, the founder of the Lansdowne family. In his next paper, while he was still a Bachelor of Medicine of “Trinity Colledge, near Dublin,” he describes the tunics of the eye with great accuracy, and announces his discovery of the ciliary vessels and nerves. He is highly praised for this discovery by the illustrious Albert Haller (often wrongly called Baron Haller, as with the modesty of true genius he had humbly declined all titles). He shortly after established a laboratory for Natural Science, attended the Philosophical Society in Dublin, became a Fellow of the Royal Society, and sent capital papers on the quantity of the human blood, and on the ear

\* An address introductory to the Session of the Royal College of Surgeons. By PROFESSOR MAPOTHER. Delivered October 27th, 1873.

in birds and fishes. Mullen enjoyed that rare opportunity in those days, the dissection of a human body, that of a malefactor, which Dr. (Sir) Patrick Dun had procured. Dr. (Sir) Thomas Molyneux recorded that "The remarkables in the body were—the right spermatick vein arising out of the emulgent vein; Pierus' glands in the gutts were not discovered. Dr. Mullen commenced doctor this last Lent commencement." As in the cases of many other Dublin surgeons, the profits of practice seduced him from the science of anatomy, for he is mentioned in Molyneux's letters as being famous for curing the gout by means of some vegetable infused in brandy. It may have been colchicum or *eau medicinale* which contains it. Fired by the success of Sir Hans Sloane's Natural History expedition, he accompanied Earl Inchiquin, the Governor, to the West Indies, but died in 1690, a few days after he had landed at Barbadoes.

By works, if not by license, the profession can claim the illustrious Robert Boyle. The most remarkable of his physiological essays was that in 1684, in which he states that the blood emits an alkaline spirit, and hence clots, and that an ammoniacal salt keeps it fluid—the theory revived in the Cooper Prize Essay of Richardson.

A few years later another Irishman, Sir Hans Sloane, became famous, but not in his native land, which he had left owing to a spitting of blood. Subsequently he enjoyed perfect health up to his 92nd year, which he attributes to abstinence from wine. No medical man ever received such honours. Succeeding Newton, he held the chair of the Royal Society for fourteen years; for sixteen continuously he was President of the College of Physicians, and he was regarded as the founder of the British Museum. A constant correspondent of his was Dr. John Locke, the immortal metaphysician. Let me read a paragraph from one of his letters, in which is foreshadowed Virchow's great discovery of embolism:—"Polypus's in the blood-vessels are found so frequently, that, I think, they would deserve to be treated of as a particular disease if there were collections enough of their history and symptoms to build any theory on, and lay a foundation for their cure."

The great surgeon at the end of the 17th century was Thomas Proby. This volume of the Philosophical Transactions contains his account of a case in which he, with the aid of Sir Thomas Molyneux, extracted a bodkin from the bladder of a girl by the high operation, in 1694. As here set forth she declared before a justice that she had swallowed it, but the direct route is more likely. The high operation was not performed in England till twenty-five years afterwards. With Molyneux he published several cases of large calculi taken from the female bladder by dilating the urethra. Here is a plate of one 2 inches in the long diameter and  $1\frac{1}{2}$  inches in the short. Dean Swift calls Proby "a person universally esteemed," and castigates Lord Lieutenant Wharton for dispossessing him of a house, and part of the Phoenix Park where now

stands the Military Hospital. He appears to have been the first Surgeon-General, and was an ancestor of the Earl of Carysfort. It is a curious coincidence that both sides of the "Sweet Vale of Ovoca" belong to noblemen descended from members of our profession, for Dr. Ralph Howard, Professor of Physic, in 1674, was the founder of the Wicklow family.

Proby was one of the trustees under the will of the generous Dr. Steevens, who bequeathed his fortune for the hospital which bears his name. Owing to the self-denial of his sister, the bequest was at once available, and the great hospital buildings received patients in 1733. It is little known that in 1756 Edward Cusack was a donor of a larger property than Dr. Steevens'. Five years previously there was opened in Cook-street the Charitable Infirmary now in Jervis-street. Upon the walls was the following inscription:—

"SOLI DEO GLORIA.

"The Charitable Infirmary was first founded and opened August, 1728, at the sole expense of the following surgeons—George Duany, Patrick Kelly, Nathaniel Handson, John Dowdall, Fr. Duany, Peter Brennan—who served the poor without fee or reward."

Up to this time there had been neither hospitals nor dispensaries for the poor—institutions which are now so numerous and well-regulated.

Would that "Infirmarys" of the present day had their origin in such pure unselfish motives as those which led to the erection of Steevens'. Jervis-street, and the Lying-in Hospitals, and were, like them, in a fair way to last for centuries.

In the year during which Steevens' was opened, Bartholomew Messe became a surgeon, upon the examination of the Surgeon-General, and for the remaining twenty-six years of his life he laboured with unexampled energy for the Lying-in Hospital, first in George's-street, and then in Britain-street. In the words of his biographer, Sir W. Wilde:—

"His eulogy is to be found in his acts. Without fortune, without influence, without patronage, without precedent, he conceived the project of affording relief to a certain class of the community, and with extraordinary energy, prudence, and perseverance, by never relaxing, never despairing, he carried it into execution at an expense of his character, station, and pecuniary independence. By the earnestness of his benevolence he interested persons of all classes, and finally secured for his good work the patronage of Government, and the protection of the Throne. For this one great object of providing an asylum and a refuge for woman in her greatest hour of trial he lived—for this he may be said to have died—died poor as to wealth, but rich in the blessings of the needy and of those who were ready to perish."

To the generosity and exertions of medical men either wholly or largely must be attributed the institution of Dun's, the Meath, the Lock,

City of Dublin, and St. Vincent's Hospitals. The name of Surgeon George Doyle deserves more recognition than it usually receives, for he was the sole founder of the Lock Hospital in 1755.

The only paper I can find of his is in the Dublin Philosophical Society on the effects of *Achillea millefolium* (or yarrow), in checking uterine and pulmonary bleeding. Hooker tells us the Highlanders use it as a local and internal astringent.

Sir P. Dun's bequest has promoted physic almost exclusively, although the deed of 1704 provides "for one or two professors of physic to read public lectures, and make public anatomical dissections of the several parts of human body's or body's of other animals, to read lectures of osteology, bandages, and operations of chirurgery." In like manner the Charter of the London College of Physicians, Henry VIII., 1518, was "for the protection of the science and cunning of physic and surgery." On condition that Dun's endowment was to be for one chair only, Albinus, Haller, and Van Swieten, became candidates, and offered to test their merits by competitive examination—the mode of election then in force. The Act of 1741, however, sub-divided the professorships, and thus was lost the opportunity of gaining for Dublin the greatest anatomist, the greatest physiologist, or the greatest pathologist of the first half of the 18th century—any one of whom, considering that one genius creates and fosters enthusiasm in a seat of learning, might have forthwith rendered our city famous.

This Act ruled that the lectures were to be in Latin and gratuitous.

About this time medical literature was very scanty in Dublin, the only authors being (Mr. afterwards Sir) Fielding Ould, then of Golden-lane, man-midwife, his fierce critic Thomas Southwell, and Dr. Bryan Robinson. Southwell's work displays more accurate anatomy than Ould's. He relates a case in which Cæsarian section was successfully done, in 1738, in Armagh, by "Mary Donally, an illiterate woman;" after the operation she "held the lips of the wound together till one went a mile for silk and common needles with which she stitched the wound, and dressed it with the whites of eggs. In 27 days the patient walk'd a mile on foot." That they were wonderful healing times appears from a case recorded in the Dublin Philosophical Society (1770), in which a man recovered after a wound of the abdomen where part of the liver and a good deal of the omentum were cut off.

Robinson was Professor of Anatomy and Surgery in Dublin from 1716, and wrote the "Animal Economy," a book in which mathematics is applied to physiology. It is arranged in forty propositions, and the thirty-seventh is as follows:—"The fibres of animals are stronger or weaker as the air abounds less or more with watery vapours or putrid exhalations, or more or less acid particles, or as it is colder or hotter." In another work he gives most exactly the weights of his food, per-

spiration, urine, and fæces for eight months of 1721, and the twelve months of 1745.

Dublin seems to have been no desirable residence in 1765, for in that and the previous year Antony Relhan, Thomas Brooke, Hugh Kennedy, Christopher Nugent, Benjamin Alexander, and Joseph Allen, leading practitioners in this city, emigrated to London, where the first five attained the very highest position, and the sixth, Allen, was surgeon to Lord Anson in his voyage round the world.

Relhan had been President of the College of Physicians in 1755, but was deprived of its fellowship in 1761 for non-residence.

If the surgeons of the day were not brilliant, they were not given to rash procedures, as those in France and England were. The *Philosophical Transactions*, about the middle of the last century, detail several cases of abdominal dropsy (probably ovarian) which, after tapping, were injected with claret.

Clinical teaching is often said to have originated during the present century in Dublin; but, in 1785, four wards of Mercer's Hospital were devoted to the reception of cases for the lectures of the College of Physicians. It is likely that the next-door-neighbours, the College of Surgeons, stepped in, for shortly afterwards the wards were closed against lecturers and students, the governors alleging that reluctance had been shown to the amputation of the limb of a girl bitten by a dog—very justifiable reluctance we may say.

That bedside teaching was pursued eighteen centuries ago, although in no very pleasant way for patients, appears from the following lines translated from Martial:—

"I'm out of sorts, but Symmachus is here,  
His hundred pupils following in the rear;  
All feel my pulse with hands as cold as snow,  
I had not fever then—I have it now."

The provincial cities of Cork and Limerick possessed the two most illustrious medical men of the middle of last century—Maurice O'Connell and Sylvester O'Halloran. The former wrote, in 1746, a treatise on fevers, calculus, and syphilis, so excellent as to gain for him, from the renowned Professor Gaubius, of Leyden, the title of the "*Irish Sydenham*." Barry, of Cork, about the same time dissected the most rheumatic skeleton on record, and of which these are pictures. The description states—"He is one entire bone from the top of the head to his knees; he was valued by his master on account of his honesty and his fidelity in watching the workmen, for when he was once fixed in his station it was impossible for him to desert it. He could neither sit or lie down, and slept in a sentry-box." The town of Strabane had also a surgeon of surprising boldness—John Ferguson, who extirpated the spleen, an operation never before performed.

In O'Halloran's nineteenth year he wrote his treatise on Cataract, and during many subsequent years performed and improved on several ophthalmic operations. It was, perhaps, upon him that the following "bull" of that day was fathered:—An Irish oculist having completely restored a woman's sight, related, with astonishment, that while she could thread the finest needle, she couldn't tell one letter from another, he having neglected to ask her if she had ever learned her alphabet. He was just the man, who, before he cured one eye need not have spoiled a hatful—a stupid, but often quoted remark of Guthrie's, which gained for his hospital the title of "blind manufactory." O'Halloran is well known as one of our fullest and most reliable historians. Among medical facts he tells us that Mr. O'Connor, of Belanagare, gave him a translation of Hippocrates into Irish, which was made many years before the Venetian—that usually supposed to be the first European edition. Again, that 1,900 years ago, Feighnin Feathig trepanned Connor, King of Ulster; and he quotes the good surgical advice which that monarch got but disregarded.

The axiom generally attributed to Sir A. Cooper, that symptoms of compression alone warrant trephining, was propounded by O'Halloran over 100 years ago.

His writings probably suggested the formation of our college, for, in 1765, he proposed the election of professors who shall examine and licence all surgeons. Also that their examination "hold for three days—the first entirely for anatomy; the second for disorders of surgery, and if a candidate for midwifery, for this also; and the third to finish with performing all the operations of surgery on a body with their apparatus and bandaging. When a proper faculty, signed by the professors, is given to the candidate, if some little honour were annexed it might add greater stimulus to the young students." This last proposal I have advocated as a substitute for that hurtful farce, the giving of testimonials. This College, on its foundation, recognized his merit by electing him Honorary Fellow—a distinction only shared by John Bell. The College has always been chary of this honour, but this year it has been conferred upon an Irishman of undoubted genius. O'Halloran was very proud of his heraldic arms, although his motto was not happy for a great operative surgeon—"Loz|m 7 ma|nba|m," the Irish words signifying "I wound and kill." An operator seeking a motto might take "*Festina lente*," that of the Plunkett and Onslow families. The latter name is a fair translation of the Latin words.

Before tracing the circumstances which led to the foundation of this College, I will say a few words about some corporations which preceded it; and, despise it as we may, the first body of the kind in Ireland was "The Guild of Barbers, or of St. Mary Magdalene," chartered in 1446 by Henry VI., "for the promotion and exercise of the art of surgery."

It consisted of men and women; and the universities now discussing female claims should study its experience. No similar incorporation took place in England till 1461, nor in Scotland till 1505.

That the body in Ireland was small and aristocratic 240 years afterwards, would appear from the charter of James II., which declares William, Earl of Limerick, John Barnwell, Knt., and a few others, "the brothers of the Guild."

The respectability of barber-surgeons was better proven by the fact that Paré was one, and that John Caius taught anatomy in their hall for the first time in England. He was the founder of Caius' College, Cambridge, wherein Harvey, Glisson, and many others of our great ones were educated. Although irrelevant, I cannot forbear quoting, from Muffet, his odd means of rejuvenescence:—"What made Dr. Caius, in his last sickness, so peevish and so full of frets at Cambridge, when he sucked one woman (whom I spare to name) froward of condition and of bad diet; and, contrariwise, so quiet and well when he sucked another of contrary disposition? Verily the diversity of their milks and conditions, which being contrary one to the other, wrought also in him that sucked them contrary effects."

After him Dr. Paddy (not an Irish one) was chosen the first "Reader of the Anatomy Lecture at Barber-Surgeon's Hall."

Two bodies may be regarded as the precursors of our College—the earliest being the Examiners for Surgeoncies to County Infirmaries, appointed by the Act of 1766. They met first in the Music Hall, Fishamble-street, to frame regulations, and afterwards, accordingly as candidates offered, in Mercer's Hospital. George Daunt, for his bold operations often called "Undaunted Daunt," was Chairman of nearly all the meetings for the first ten years. Soon after this College was chartered it assumed this examining power, and in 1789 qualified Percival Banks for the Clare Infirmary, he having been refused, on some technicality, examination by the older board.

Our more direct parent, the "Dublin Society of Surgeons," met for the first time on March 29, 1780, in the "Elephant" Tavern, Essex-st., which was built where the elephant was burned 100 years before, as I have said when speaking of Mullen. It is remarkable that their meeting days were the first and third Thursdays of each month—days still retained by our Council. The President was Henry Morris, and James Henthorn was chosen Secretary—an office he held in the College till 1832, performing his duties with amazing industry and punctuality. At an early meeting it was unanimously resolved "that a Royal charter dissolving the preposterous and disgraceful union of the surgeons of Dublin with the barbers, and incorporating them separately and distinctly upon liberal and scientific principles, would highly contribute not only to their own emolument and the advancement of the profession in

Ireland, but to the good of society in general, by cultivating and diffusing surgical knowledge." The reading of essays seems to have been part of their proceedings, but I can find no record of them. In "*Baratariana*," which that charming writer, Fitzpatrick, has proven to be the production of Grattan, Flood, and Langrishe, Cunningham, a leading member and the chief founder of the Meath Hospital, figures as "Don Alexandro Cunninghambo del Tweedalero."

This Society laboured nobly for the establishment of the College, and visited several foreign universities and colleges in order to understand the best principles of surgical education. At last the charter (the formidable parchment on the table) was granted (Feb. 11, 1784), and humble premises near Mercer's Hospital were secured.

The preamble of the charter declares "that the reputation of the profession of surgery is of the utmost importance to the publick and highly necessary to the welfare of mankind, and that the publick sustain great injury from the defects in the present system of surgical education in our kingdom of Ireland; and that the regularly-educated surgeons of the city of Dublin (who are become a numerous and considerable body) find themselves incompetent (from want of a charter) to establish a liberal and extensive system of surgical education."

At the first annual meeting, Jan. 3, 1785, at the Lying-in Hospital, the following officers, nearly all of whom were nominated in the charter, were elected. *President*—S. C. King, 26, Jervis-street. *Censors*—J. Whiteway, 28, Stafford-street; P. Woodroffe, 2, St. Andrew-street; R. Bowes, 49, Jervis-street; W. Dease, Merchant's-quay; J. Neale, 3, Dominick-street; G. Hume, 3, Suffolk-street. *Assistants*—W. Vance, College-green; A. Lindsay, 92, Dame-street; T. Edwards, 7, Great Britain-street; F. Lestrangle, Eustace-street; C. Boulger, Exchequer-street; G. Stewart, 32, Mary-street; T. Costello, Jervis-street; R. S. O'Brè, 18, Abbey-street; W. Hartigan, South King-street; R. Sparrow. Capel-street; J. Sullivan, 4, Fisher's-lane; and F. M'Evoy, 13, Abbey-street.

When this list is placed beside the council roll of to-day, one cannot fail to be struck with its greater proportion of Hibernian names, and the fact that the heads of our profession then resided in very second-rate streets in Dublin. They probably consoled themselves with the reflection that the grand houses were occupied by nearly four-score noblemen and by many wealthy commoners who paid fine fees. I am told the fee-book of the President (of whom Wellington was a patient) shows sums for surgical operations incredible in the present day. But in these days of rising prices surgical fees are sinking if paid by the visit, for anti-septic treatment heals a stump in as many days as it took weeks ten years ago, and the aspirator in a day cures an abscess which would then have drained both the patients' blood and pockets for weeks.



Justice is done to the wise intentions of our founders by the Rev. Mr. Whitelaw, the learned historian of Dublin, who wrote as follows:—"Their projects for the public good and for the advancement of the profession were not circumscribed by narrow tenets nor actuated by those selfish monopolizing motives which so frequently influence the acts and proceedings of incorporated societies. Men of all persuasions were admitted, and the most lucrative and honourable situations were as open to the licentiates of every sect as to those of the Established Church."

Two good old surgeons, although mentioned in the charter, do not appear to have taken office, owing, probably, to their consciousness of the disabilities of age—George Daunt and Henry Morris. The former is well remembered by his lithotomy instruments, for which the Academy in Paris voted him thanks in 1754.

Morris, from the dedication of Dease's work, and his constant Presidency of the Society of Dublin Surgeons, seems to have been an acknowledged leader. He cut out, in 1773, in Mercer's Hospital, perhaps the largest calculus ever successfully removed; it weighed  $15\frac{1}{2}$  ounces, and here is its full figure. That stones were more frequent in the past than in the present century, and that persevering efforts were made to prevent or dissolve them, appears from an able paper in the Royal Irish Academy (1805), by Thomas Egan.

Another senior, Gustavus Hume, also soon passed away, but his sixty years' service and benevolence are attested in the ward in Mercer's which bears his name—and his wealth, by his having built several streets, Hume-street amongst others. He was a great believer in the once-famous Lucan Spa, which one of these days may be revived; for it and the adjoining house—wherein was established an Idiot Asylum through the generosity and benevolence of two of our fellows, Drs. Stewart and Kidd—are now for sale.

Sir Henry Jebb was also a member of the Society of Dublin Surgeons, and became Professor of Midwifery, and finally President of the College in 1800. It was probably owing to the fact of such able obstetricians as Dease and Jebb being among the founders of our College that midwifery, despised by contemporary bodies, was at once fostered. According to that excellent poem, the "Medical Review," by Dr. Gilborne (1775), in which about 200 Irish doctors are noticed, nearly all the surgeons practised midwifery. Many of them insisted on maternal nursing, and in those days milk was always on draught, never in bottle. One of the original surgeons of the Meath Hospital is alluded to in the following lines of the poem:—

"With well-contrived utensils, good Hawkahaw  
An aching, useless, hollow tooth can draw,  
With straight, diverging, or converging fangs,  
And gives the jaw and tender gum no pangs;

But if the pain proceed, in young or old,  
From scurvy, rheumatism, or humours cold,  
He sooner would th' expected fee forego,  
Than make a breach in fair enamelled row."

A few years after Sir P. Crampton's father, Blake, and Lestrangle, the ancestor of our great surgical mechanist, made Dublin dentistry famous; yet the profession is still unregulated. Our London sister has set a good example.

Subsequent to its incorporation the two great events in the history of our College are—the erection of this splendid building in 1806, and its enlargement in 1825. The College recognized the services of Surgeon-General Stewart and George Renny, in procuring the Government grant, by a bust, and the splendid painting which adorns our board-room. The first stone was laid by the Viceroy, the Duke of Bedford, on Patrick's Day, 1805. The ground had been the Friends' Cemetery, and amongst the remains transferred were those of Dr. Rutty, our most voluminous writer in the last century. In this theatre there was a gallery from which the public were allowed to witness the dissection of malefactors.

In 1825 the building was enlarged, and rendered more uniform and perfect by the addition of the Museum. The cost of the whole structure was £40,000, which seems in these days a most moderate sum. In that year the College lost one of her most earnest servants, Charles Hawkes Todd, whose works on hernia and aneurism were so admirable. His fame has been eclipsed by that of his son, Robert Bentley Todd.

From this year the College increased in prosperity, and gave 314 licences during the ten years, 1826–35. During the same period the University conferred 145 medical degrees, the College of Physicians 43 licences, and the Apothecaries' Hall 572. How vastly have these proportions altered of late years!

Since the erection of the Museum its largest benefactors have been the Duke of Northumberland, whose grandfather, the first Duke of the present line, was a member of our profession, and the eloquent teacher John Kirby; and the College attested their gratitude by the busts which grace our largest room. This collection is almost unrivalled, and includes over 7,000 specimens; while our library contains 17,000 volumes. For both more space is sadly wanted.

Among the original founders of our College (and Professor until his death) was Wm. Dease. He improved Daunt's lithotomy instruments, which Peile afterwards perfected. He was accused by John Bell and Liston of having concealed his mode of operating. Hear Sir P. Crampton in his defence:—

"He gave a public course of operative surgery annually at the College of Surgeons, and demonstrated his operation with staff and knife with the utmost minuteness, always dissecting the parts immediately

after the operation, so as to exhibit to the class the direction and length of his incision. It was also his custom to demonstrate his operation—of which he was, naturally enough, not a little proud—to all foreign surgeons who happened to visit Dublin; and, among the rest, I remember to have been present when he operated upon the dead subject for Gimbernat, the celebrated anatomist. I feel that it is due to the surgical profession at large, and to the memory of one of the greatest surgeons that this country has produced, to vindicate his character from a charge which would sink him to the level of the Colots and Raus."

Another calumny was that he always carried a calculus in his pocket, which he would slip into the bladder if he had found none through a mistaken diagnosis.

His work on Injuries of the Head is invaluable, and his Observations on Midwifery is still a classic. Dr. M'Clintock has kindly pointed out to me that the analogies of surgical and puerperal fever, generally said to have been first perceived by Sir J. Simpson, were clearly laid down by Dease.

Two versions, equally lamentable, are given of the cause of his death, in January, 1798. Dr. Madden states, in his "*Lives of the United Irishmen*," that being warned by Surgeon-General Stewart, through Peile, then President, that he was about to be arrested, "he went home from the College, where the intelligence was given to him, opened the femoral artery, and died of hæmorrhage." Others assert that having opened an aneurism which had suppurated, and which Richards had diagnosed as an abscess, in the Meath Hospital, he was so horrified by the man's death that he inflicted the same mortal wound on himself.

His co-professor, William Lawless, a relative of Lord Cloncurry, was also warned, escaped, and died in 1824, a Major-General in the French army. Many others of the profession appear to have been United Irishmen—Richard Dease, Adrien, and Macneven, for example. The College does not appear to have regarded political feelings a bar to promotion, for Dease was elected to his father's chair, and Adrien, the surgeon who staunched Lord Edward Fitzgerald's wounds, became Professor of Medical Jurisprudence. Macneven became a great practitioner in New York, and his biography has been written by the famous Professor Francis.

About the beginning of the present century, our profession could boast of several provincial lights, and none were more remarkable than James M'Donnell and John Jacob, whose sons and grandsons have held high places in our College. Here are instances of hereditary transmission of professional qualities. At the conferring of degrees in Edinburgh, in September, 1784, M'Donnell's thesis was "*On the Drowned*," while other Irishmen produced also able essays—for instance, Thomas Addis Emmet, "*On Atmospheric Acid*," and James Curry, "*On Contagious Diseases*." Dr. M'Donnell discusses with great judgment the various means then

known for the restoration of drowned persons, and, as a last resource, suggests transfusion of blood.

In passing, let me say that Dublin is sadly in want of appliances for rescuing persons from the river or canals, and when they are carried to an hospital, life is usually extinct. If the London system of keeping appliances at taverns or other houses close by were imitated, great saving of life would result. Early in the present century we had a Humane Society, founded by the Duke of Bedford, but it seemed to have been very short-lived. Two boats and some recovery stations were organized by it.

Having settled in Belfast, M'Donnell succeeded to the position of Dr. Haliday, so well known as the most intimate friend of the great Lord Charlemont. The Fever and General Hospitals of that town were mainly established by his exertions, and in the latter he inaugurated clinical teaching in 1827. His great paper "On the Differential Pulse," or the variation of the heart's rate by posture, was only published at the Dublin meeting of the British Association in 1835, although he had made the discovery therein supported as early as 1784, his graduation year. He endeavoured to ascertain the cause of the variation in the way since described by Professor Guy—with different results however.

In a notice, believed to have been written by one now among the very highest in the land, and which gives proof of his future renown for eloquence, it is said :—

"The town of Belfast should remember him as its most eminent benefactor, who toiled for it through many a long year, without spending a thought on himself or valuing his own great services, without a motive but love for his fellow-creatures, or an earthly reward save the memory of the good he had achieved." In 1809, in the Queen's County Infirmary, amputation through the hip-joint was first performed by John Jacob.

The Dublin Almanack for 1796 first mentions Abraham Colles, of Chatham-street, as a Licentiate of this College, and six years after he was elected President—his promotion being the most rapid on record. His apprenticeship to Woodroffe only began in September, 1790. Having lectured—or ground, as we say now-a-days—like the German private teachers, he quickly qualified for the Anatomy and Surgery Chair of this College, which he held from 1804 to 1836. In the latter year the College unanimously voted that his ability was "the principal cause of the success and high reputation of the School of Surgery in Ireland." He was a successful lecturer, because he was always in earnest, lively, but not too fast, and availed himself fully of his practical opportunities, and of the splendid specimens in our museum for illustrations. He often filled this theatre with 300 anxious listeners, and all of the thousands he taught, when they became practitioners, regarded him as their consultant. Their confidence was, moreover, always maintained,

for they found Colles displayed, besides skill and learning, "the chastity of honour," to use the term of our Edmund Burke.

Colles was Examiner also for thirty of the thirty-three years during which he was Professor, without a suspicion of favouritism; yet the new charter made the two offices incompatible.

His works on Surgical Anatomy, in which he first described glandular mammary tumour, on Fracture of the Radius, on Syphilis, and on other subjects in the Dublin Hospital Reports, gave him world-wide fame; yet he was not forward in publishing, for some of his best writings were printed after his death by his son and worthy successor, and by Professor M'Coy.

Throughout a long controversy on syphilis and mercury, Colles and Carmichael were most careful of each other's reputation. They were, indeed, "living epistles known and read of all men." His long illness was somewhat obscure in its nature, and he wished, therefore, that a *post-mortem* examination should be made. Professor R. W. Smith accordingly examined his body, and found a dilatation of the vena cava, like that discovered by Houston in diving animals, with a like office, that of being a lie-by for the blood during obstructed breathing. The desire that science should benefit by the examination of their remains has actuated many medical men, and the great Warren, of Boston, willed that his skeleton should be prepared for his anatomical museum. Colles's funeral is reported to have been more largely and respectably attended than any in Dublin for forty years before. His humility is shown by the fact that, like Abernethy, and for like reasons, he declined a baronetcy—a resolve which is to be regretted, for every one in our profession would have felt himself honoured in the decoration of its greatest member, the more so as there was a worthy surgical heir.

No career could be more worthy of commendation than that of Richard Carmichael, whose industry gained him the Presidency of this College at thirty-three, and whose benevolence will be remembered in it for centuries. Having been wholly educated in this school as Peile's apprentice, he served a few years in the army, and having settled in Dublin, rapidly gained consulting practice. His noble appearance, scholarship, and lordly birth, may have contributed to his success, but on these he by no means relied. Although he believed he could claim the Earldom of Hyndford, he abstained from doing so for reasons which attest his unselfishness.

Let me detail a few of the many instances which portray the generosity of his character. In 1835 Adams, the revered father of Irish surgery, and M'Donnell, sought the Surgeoncy of the Richmond, vacant by Ephraim M'Dowel's death. Other candidates, acknowledging their claims, had stood aside. To gain two such men for the hospital, Carmichael himself resigned, and both were elected.

Although receiving many and large apprentice fees, he carried, in 1828,

the abolition of the system by which no one could become a Licentiate of this College without apprenticeship. If indentured, a candidate could present himself without ever having entered a dissecting-room or hospital. Those who could not afford the large fee had to resort to England or Scotland, and the charge trebled the number of our Licentiates.

The monopoly was not confined to our College, for at the same time the Edinburgh College charged for its Fellowship the sum of £250 to non-apprentices. This title is now given on quite too easy terms, for the holder of any surgical license, if recommended, may obtain it without even appearing at the College.

In replying to an address of a great number of the Fellows and Licentiates of the Royal College of Surgeons, presented by Dr. Whistler, Mr. Carmichael made the following generous announcement:—

“Since the termination of my year of Presidentship of the College (the third time I have had that honour), I have relinquished all practice, except in my own house, or out-of-doors, in consultation with a qualified practitioner. This determination has, in a great measure, arisen from a wish to show a good example to my contemporaries, which, I trust, will, in due time, be followed for the benefit of their juniors.”

The gifts of Carmichael, for professional purposes, exceed £18,000, including £5,000 to the Medical Benevolent Fund (that excellent charity to which even you students should contribute), and the sum which yields every third year, for essays on our profession, £200 and £100, or twice those amounts if not awarded on the previous occasion. His large bequest to the school which bears his name was to revert upon the decease of his widow, but, like Griselda Steevens, she advanced it while she lived. Lord Carlisle, in founding the new building, spoke of Mrs. Carmichael as follows:—“This brief address would be most incomplete if it made no mention of her who had the most interest in the fame of her husband, and who has done more than all others to extend and perpetuate it; who, showing a wiser as well as a nobler love than the Carian Queen of old, has not sought to raise over his cold remains her mausoleum in the dumb marble or lifeless statuary, but has caused him, though dead, still to speak in precious services to suffering humanity—still to live in the thanks and blessings of rescued multitudes.” Several of the reforms which Carmichael disinterestedly advocated have been achieved; for instance, pharmacy is now conducted almost exclusively in a few large establishments, there being, besides, highly qualified general practitioners; and again, in Dublin, no rigid division between medicine and surgery is attempted. A medical degree is no longer needed for the fellowship of the College of Physicians, or hospital physiciancies, and in one large hospital not any of the three physicians possess it. Early in the century Colles and Crampton took medical degrees in order to lead to this unification of the profession.

One other concession which Carmichael claimed for you is not yet granted, but do not despair—it is the admission of students to the Surgical Society.

We are told that Cheselden, the greatest of lithotomists, lectured on surgery when twenty-two, and had gained for his scientific attainments the Fellowship of the Royal Society the year before. Crampton, our great lithotomist, had a similarly early start, for a year after his apprenticeship to Richards had ended, and when his only qualification was that of "Army Assistant," he was made Surgeon to the Meath Hospital, an office he held for sixty years. He was elected Assistant-Censor in this College in 1802. Good fortune did not, however, spoil him, for, leaving his relative's house in Merrion-square, he entered into a most laborious mode of life. Behind his house, 49, Dawson-street, from 1804 to 1813, he lectured on "Anatomy, Physiology, Pathology, and Surgery. Practical Anatomy, as usual, under the direction of Mr. Crampton and Mr. Harkan." So runs the advertisement in the "Dublin Medical and Physical Essays." In 1804 he published his famous essay on Entropion, and in 1813 discovered in the eyes of birds the muscle which bears his name. By this perfect development of the ciliary muscle the lens is so adjusted that the pigeon and migratory birds find their way in the trackless air, and the rapacious birds sight their prey whether close by, or a mile below them on the ground.

Throughout life Crampton was an ardent worker at comparative anatomy, like other great ornaments of our profession. Sir A. Cooper, while making £20,000 a year by practice, held the Chair of Comparative Anatomy in the College of Surgeons, and habitually rose at four to make his dissections. In 1813, having succeeded Stewart as Surgeon-General, Crampton moved to the well-known pear-tree house, in Merrion-square, and there, after an unexampled share of practice, and of social rank, he died in 1858. Most of you must have read the inscription on his monument, from the pen of Lord Carlisle, then Lord Lieutenant:—"This fountain has been placed here, a type of health and usefulness, by the friends and admirers of Sir Philip Crampton, Bart., Surgeon-General to Her Majesty's Forces. It but feebly represents the sparkle of his genial fancy, the depth of his calm sagacity, the clearness of his spotless honour, the flow of his boundless benevolence."

Maurice Collis described his surgical excellence as follows:—"Crampton's great *forte* lay in acute observation and rapid power of combination. A look, a touch, one or two pregnant questions, and the diagnosis was made, and treatment rapidly determined upon. And with this rapidity of judgment—so captivating to the looker-on, and so fatal to those who, with less accurate eye, and feebler powers of deduction, attempt to copy it—he seldom erred. To the last his hand was light and steady, his movements as an operator quietly graceful, devoid of ostenta-

ious show, rapid, but not hurried, cool in every emergency, and prompt in every danger." His successful and improved operations on two cases of cleft palate, so lately as 1848, corroborate the latter statements. Moreover, he was the reverse of *inmisericors*—a character which Celsus wrongly says is needful for the operator. His placidity of temper was well attested by one of his servants, who said:—"I have lived with him three-and-thirty years, and never did I hear a cross word from his lips."

His splendid *personnel* is indicated by the following anecdote:—At the King's levee here, in 1821, Crampton appeared in the uniform of Surgeon-General, which was completely military. The King, struck by his noble appearance, said to Lord Norbury, "Fine man! General Officer? in what branch of the service?" Norbury, being too much of a courtier to allow that royalty could be mistaken, and too inveterate a punster to miss an opportunity, replied, "May it please your Majesty, that is Crampton, a General in the *Lancers*."

The scientific works of Crampton, some of which have been alluded to, indicate striking ability, and his scholarship is apparent from his Introductory Address in 1835, and his "Outline of the History of Medicine, intended to illustrate the connexion between the progress of Anatomy and the perfection of the Healing Art," delivered in this theatre in 1838.

As the very personification of a practical surgeon, and as one who, as President and Secretary, served this College well, Cusack claims attention. Although a highly educated man (for he had been a scholar and gold medallist of our University), he wrote but little. His descriptions of the few cases he has published were, however, most vivid and faithful. Sir W. Fergusson lately wrote that he had a lively recollection of having read, as far back as 1827, "the exciting descriptions of certain operations on the lower jaw by Mr. Cusack."

As a student he had a strong repugnance to operations, and it is remarkable that he never wholly conquered the feeling. When he was over seventy, he is reported to have said—"It was not that my hand was not steady, but I am so anxious before operating that I feel the strain too much for my system. You will be surprised when I tell you that from my first to my last operation, I have never been able to sleep the night before, but lay thinking how I should operate, what difficulties would arise, and how I should meet them."

He would never operate by time, feeling that haste was unjustifiable, even in pre-anæsthetic days, and that it often risked caution and thoroughness. He was most careful of the dressings of his cases, and in this particular he might be styled "*maximus in minimis*." His great popularity as a teacher is shown by the fact that he entered seventy-eight apprentices on the books of the College—a number nearly thrice that entered by any other.



Beginning without the small certainty which has so often idled and ruined young men, he amassed a vast fortune by his profession.

James Macartney, the famous Professor of Anatomy in Trinity College (1813 to 1838), is generally supposed to have been an Englishman, but Armagh had the honour of his birth. As the discoverer of the immediate union and the modelling process in wounds, the advocate of the cold water dressing, and the author of the Treatise on Inflammation, his fame will be enduring.

His valuable museum is in Cambridge, but whether it was lost to our city through the owner's fault, or the parsimony of the authorities, I do not know. Macartney was proposed as an Honorary Fellow of our College, but he died before the day of election, in 1843.

His evidence before the Parliamentary Committee, which sat on the Anatomy Bill, contained some curious statements. He says:—

"A report was propagated in Dublin, which originally had been circulated in Scotland, that children were kidnapped for the purpose of dissection, and this became so currently believed by the populace that it was necessary to protect one of the anatomical schools for nearly a week by means of the police."

He tells us that he had paid the expenses of prosecution of some persons who had killed a Resurrectionist, and that many armed students used to go to the graveyards. At the same time, Sir A. Cooper showed that the body of the highest in the land could be had—the prohibition only raising price.

Such evidence, and the disclosure of horrid murders and "Burking," procured the Act which has so greatly aided anatomical science, and the consequent saving of life.

The following is an extract from the diary of a Resurrectionist, given in Sir A. Cooper's Life:—

"1812, Nov. 11, Saturday.—At 4 a.m., got up and went to the Hospital Crib; got 2 adults; met at Barth<sup>m</sup>.; packed up 2 for the country; sold 1 at St. Thomas's; at home all night.

"12th, Sunday.—At home all day. At 11 p.m. met, and the whole party went to Wygate. Got 2 adult and 2 small. Afterwards went to the Green. Got 2 large and 1 large small (that is, a well-grown child). Took them to Barth<sup>m</sup>."

The friends of our hospital patients show much more willingness to allow *post-mortem* examinations, provided religious rites are not prevented, than similar persons in other cities.

To none of its Fellows should this College be more grateful than to Shekleton and Houston, curators, almost founders, of its museum. During his apprenticeship to Colles, Shekleton showed such skill and industry in dissection, that he was urged to seek the curatorship. The exhibition of specimens being required, he produced, among others, this

injection of the lymphatics of the lower extremity, which has excited the wonder of all anatomists who see it. To the museum and dissecting-room he wholly devoted himself, meanwhile recording such original observations as those on "dissecting aneurism." In 1824, a year before his cherished hope of a new building was realized, a dissecting wound terminated his valuable life when he was but twenty-nine years old. His example—and still more that of Bichât, who also died when twenty-nine—show how much zeal and industry will in a short time accomplish. The same fatality deprived the College of two other eminent officers—Richard Dease, Professor of Anatomy, in 1819, and Maurice Henry Collis, in 1869.

Among the mourners at Shekleton's funeral was his apprentice and fellow-labourer, John Houston; and it happened that it was the very day fixed for his examination. His answering, despite this depressing influence, was so brilliant, and his character as a student so high, that for the curatorship he had no opponent, although, as usual, this important office was open to competition. In addition, he soon after served the College as Demonstrator of Anatomy, and the curatorship he retained till his death. He, indeed, may be said to have died in harness, for while lecturing in Park-street School he was first seized with his fatal cerebral disease. His "Introductory," given in that school a few months previously, is the ablest I have ever read. It has been frequently quoted in America. His most famous papers were those on the "Rectum;" "The Section of the Pelvic Organs," which bears his name; "The Circulation of Diving Animals;" and "The Treatment of Fractures." His great work is, however, the Catalogue of the Museum, now out of print; its re-issue, therefore, with additions, would be a fitting monument, the more called for as neither marble nor canvas perpetuate his fame within these walls. It is an odd coincidence that to a namesake of Houston, and to a namesake of his contemporary, Ephraim M'Dowel, is assigned the first performance of ovariectomy. Professor Gross, in a memoir of the great Kentuckian of the latter name, asserts that in 1809 he performed ovariectomy for the first time; but I find, by the thirty-third volume of the Philosophical Transactions, that it was done successfully by a Dr. Houston in 1701.

The career of one of Houston's contemporaries, Valentine Flood, illustrates the loss which medical science in Dublin suffers from her votaries so often deserting her to seek for practice. Here was a profound anatomist, a writer already famous by his work on the arteries, a lecturer so able that he fired his pupils with enthusiasm, who deserts all for practice among the poor and the hopes of gaining the favour of the rich. Being disappointed in this, and having lost his class, he was forced to accept an appointment to a village fever hospital in Tipperary, where typhus soon ended his career.

Many other examples and many arguments could be adduced to show that the pursuit of medical science should be encouraged by the endow-

ment of Chairs, or the amalgamation of those already too numerous, and therefore unremunerative. Dublin has been a practical, not an original School, but there are symptoms of a happy fusion.

And now, gentlemen, certain considerations suggest that I should bring these commentaries to a close—firstly, the desire to respect your patience; and secondly, that others whom I would wish to notice are too lately taken from us to receive dispassionate treatment at my hands.

On some future day justice will be done to the memories of Rawdon M'Namara, *primus*—too early lost to surgery; of William Henry Porter, most eloquent of lecturers and most elegant of surgical writers; of my revered master, John Hatch Power; of O'Bryen Bellingham, the most earnest friend of the Surgical Society; of Robert Williams, the sturdy advocate of the College rights; and of the benevolent Kingsley; all of whom are commemorated by bust or portrait. Still to the catalogue of great Irish surgeons must be added the names of Peile and Wilmot, O'Ferrall and O'Beirne, Hutton and Ellis, Harrison and Ledwich, Beatty and Johnson, Smyly and Banon (lost to us whilst Presidents-elect);\* and from the lives of any one of them good and fruitful lessons may be deduced. Many of our living celebrities have also done good work, which you must yourselves master in their monographs, the cyclopædias, and the journals. None of those whose careers we have studied to-day gained any position through nepotism. Of those who depend on such influence alone, it has been said by Sir D. Corrigan, in an address last July at St. Mary's Hospital:—"I have occasionally—nay, often—seen men raised by the influence of connexions or extraneous circumstances into temporary eminence—but if they went up like a rocket, they came down like its stick."

Two resignations and a universally-regretted death have changed our professorial staff during the year. Charles Benson and Wm. Hargrave—than whom the College never had more tried or trusted servants—have sought well-earned repose, and William Barker, who, although not a surgeon, was the teacher and well-loved friend of a thousand, has passed away. Younger but no less earnest men fill their Chairs.

Let me end this lengthy lecture by reminding you how largely the leaders of our College for several generations owed their positions to honour and industry, and verified the words of Wm. Hunter:—"A young man cannot cultivate a more important truth than this, that apart from future recompense, merit is sure of its reward in this world."

\* A few hours after these words were spoken, our Vice-President, Professor R. W. SMITH, breathed his last. As founder of the Pathological Society, and for thirty-five years its zealous guardian and largest contributor—as the ablest orator of the British Medical Association—as a full and original author—and as one whose devotion to his science was so entire that he resigned emolumentary practice—his fame will endure in this and all other countries where Surgery is cultivated.





MR. WHEELER ON SUCCESSFUL REMOVAL, BY THE KNIFE, OF A LARGE LIPOMATOUS TUMOR.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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DECEMBER 1, 1873.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XXIII.—*Surgical Reports.—Successful Removal, by the Knife, of a Large Lipoma from the Head, measuring one foot six inches (1 ft. 6 in.) from attachment to summit, and one foot three inches (1 ft. 3 in.) in circumference, weighing nearly three pounds (3 lbs.)* By W. I. WHEELER, M.D., Trin. Coll. Dub.; L.K. & Q.C.P., L.R.C.S.I.; Surgeon to the City of Dublin Hospital, and Lecturer on Clinical Surgery; Demonstrator of Surgical and Descriptive Anatomy, Royal College of Surgeons.

JOHN DARMODY, a man of seventy-five years of age, and handsome features, was admitted into the City of Dublin Hospital on the 6th of June, 1873, under my care, suffering from a large oval lipomatous tumour, situated on and occupying the left part of the frontal bone, and the anterior and lateral portions of the left parietal bone, and being by admeasurement from its attachment to its summit 1 ft. 6 in., and in circumference around its widest part one foot three inches (1 ft. 3 in.)

It created such considerable disfigurement, and caused so great an inconvenience from its size and weight (the latter of which proved on its removal to be nearly three pounds—3 lbs.), and from its hanging over and compressing the left eyelid, so as nearly to obliterate the vision of the eye on that side, unless when the tumour was raised up and supported, that it rendered him incapable of attending to or pursuing his usual avocations. On examination

the tumour felt dense and firm, and had a slight pulsation, which ceased when the left temporal artery was compressed. It pitted slightly when much pressure was exerted, and there was an obscure sense of fluctuation, which rendered the nature of the tumour at first doubtful, but on removal it presented the usual microscopical appearances characteristic of fatty tumours. The result of an analysis—kindly made for me by my friend, Professor Cameron—is as follows:—

## COMPOSITION OF TUMOUR.

100 parts contain:—

Water,	-	-	-	-	20.90
Albuminoid substances,	-	-	-	-	35.10
Oily and fatty bodies,	-	-	-	-	43.75
Ash,	-	-	-	-	0.25

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100.00

*Previous history.*—He states that it commenced to grow thirty-five (35) years ago, and continued to increase till it became about the bulk of an orange, when it remained stationary until the last two (2) years, within which period it attained its present size; that he never received any injury, or was not aware of any cause which could have induced its growth. Through the courtesy of Dr. Andrews I afterwards ascertained that he had received an injury under the following circumstances, exactly where the tumour grew from, and I quote the words of his letter, dated 6th August, 1873, nearly two months after the removal of the tumour:—

“I yesterday made close inquiry from Darmody as to the cause or origin of this tumour. He states about forty years ago he was assisting in extinguishing the flames of a burning house, and was handing up water in a pail to a man over him on a ladder. The man let the pail fall, the chine of which struck him exactly where the tumour lay. This may have been the cause. In about twelve months after it began to make its appearance.”

After due deliberation and consultation, I determined to remove the tumour; and was more persuaded to the necessity of this conclusion from the inclination it showed to soften at the left lateral aspect, feeling assured that had suppuration or sloughing occurred in a tumour of this magnitude (although such is uncommon), and in a subject advanced in years, that the chances of recovery, either

with or without operative interference, would be considerably lessened.

On the morning of the 14th day of June, in the theatre of the hospital, before a large class of students and several of the eminent surgeons in Dublin, he was placed on the operation table, and put under the influence of ether with Mr. Richardson's apparatus, so graphically described in the *Dublin Journal of Medical Science*. The time occupied in procuring anæsthesia was six and a half ( $6\frac{1}{2}$ ) minutes; the amount used was five ounces; and the period he was under its influence was fifteen (15) minutes. There was not any excitement or muscular rigidity; the pulse was sixty (60) per minute, the temperature being about sixty-two (62) Fahr. Having acupressed the left temporal artery, which was very much enlarged, I proceeded to operate. Holding a strong scalpel in my left hand, I commenced by making an incision from right to left, concave backwards, at the fore-part of the tumour; and changing the knife to my right hand, made another incision convex forwards, at the posterior part of the growth. I now passed in the handle of my knife, and detached the tumour partially, and afterwards with my fingers I endeavoured to separate the still-adhering part from the pericranium, but finding I was denuding the bone, I cut its attachment to this membrane; the bone was not indented by the tumour. Included between the incisions was a considerable portion of integument, as it was unnecessary to preserve all the skin, there being ample to cover the wound and allow for retraction, notwithstanding the large portion I removed. Although the temporal artery was compressed, there was considerable hæmorrhage, the tumour being very vascular; two veins that were necessarily divided bled freely. I did not now remove the pressure from the temporal artery, and secured seven (7) vessels with carbolized cat-gut ligature, and brought the edges together by means of carbolic suture. A pad of lint was placed anteriorly, and another posteriorly, both being held in position by strips of adhesive plaster, and carbolic oil was applied over the wound. After the operation the patient's pulse was eighty (80) per minute. Ordered beef-tea, ice to suck, and an anodyne draught.

On the second day after the operation the patient was restless; his pulse had risen to 106 per minute; head very hot; a turpentine enema was administered, and it not having the desired effect, he got five grains of calomel in bolus; lint, soaked in iced-water, to be applied to head; a diaphoretic mixture was also ordered. He was much

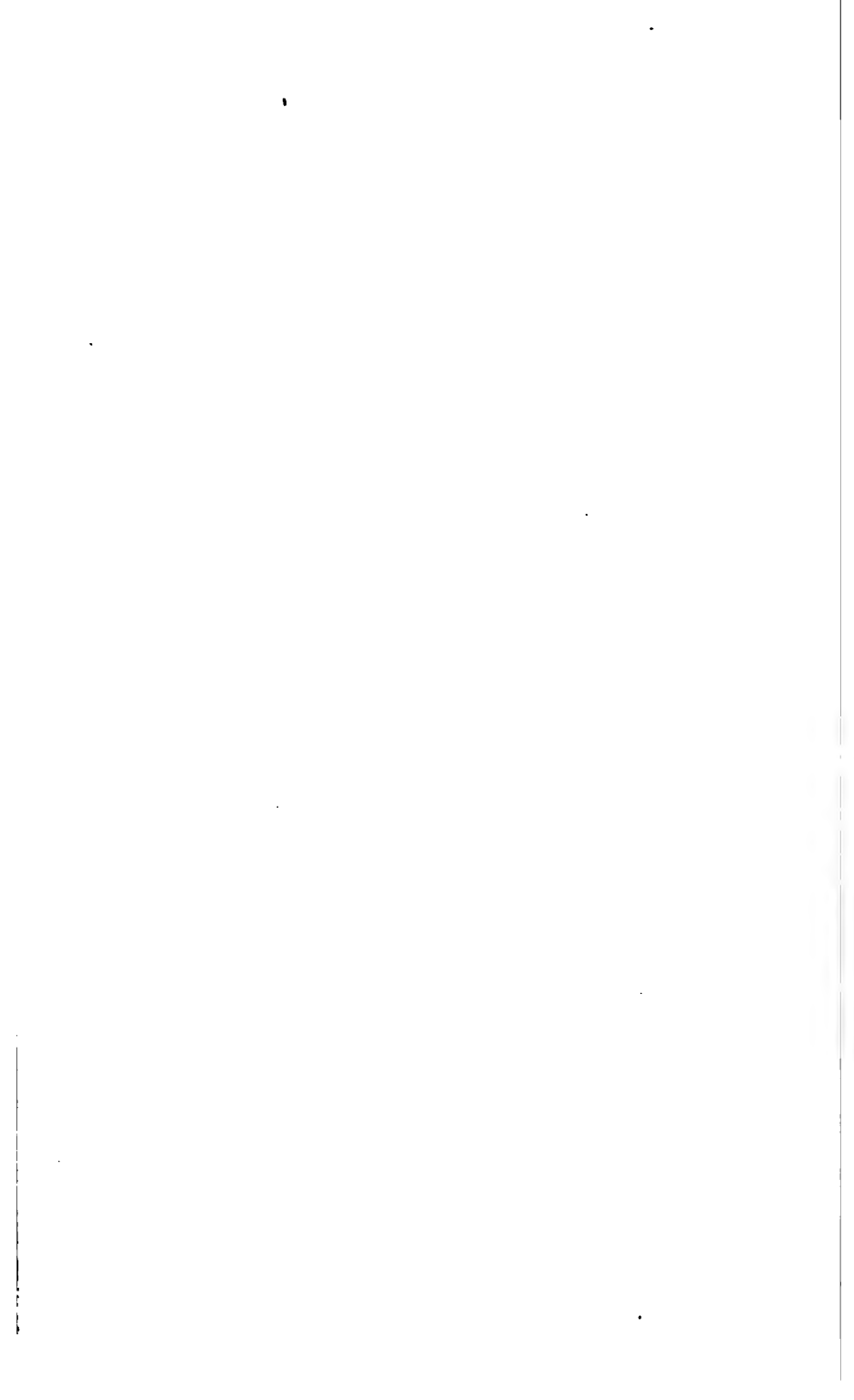


benefited by the treatment prescribed, and continued to progress till he was discharged from hospital, perfectly cured, on the 26th day of July, 1873, with very slight deformity (*vide* accompanying lithograph). Four of the ligatures separated on the eleventh and twelfth days, two on the sixteenth, and the last on the seventeenth day after the operation.

The acknowledged importance, by every practical surgeon, of fatty tumours renders the above described case of more than ordinary interest, forming, as they do, such a momentous class in the list of surgical affections occurring at all periods of life, from infancy to old age; they may even be congenital. Fat is deposited under two forms, diffused and circumscribed; it is the latter which is termed the Lipomatous or Steatomatous tumour. The diffused form differs from the circumscribed in having no well-defined boundary, and being less soft and elastic, made of smaller lobules of fat. As Sir B. Brodie states, "there is no distinct boundary to it: it cannot be said where the natural adipose structure ends and the morbid growth begins." Fatty tumours are usually single, but there are many exceptions, no less than two hundred and fifty (250) having been found of various sizes on the same person. The most usual situation for them is the trunk and neck, and the extremities closest to it. They are most frequently situated on the subcutaneous tissue, but have been found much deeper. Mr. Abernethy relates a case where one was attached to the capsule of the hip-joint, operated on by Mr. Cline. They may occur in any part where fat is abundant, but are not of necessity confined to localities abounding in adipose structure; they are rare in the fat about internal organs. Müller describes one between the optic nerves and corpora albicantia; and Rokitansky, including the diffuse form, gives examples of lipoma in the sub-mucous tissues of the stomach, intestines, and bronchi—in the sub-mucous tissues of the pleura, peritoneum, and ventricles of the brain. A case of fatty tumour of the pharynx and larynx is described by Mr. Holt; and in St. Bartholomew's Hospital Museum there is a specimen of fatty tumour from the palm of the hand. Virchow has described them on nerves. Lipomatous tumours are not frequently found in the scrotum, and those which have been probably changed their position. In Mr. Lawrence's case the tumour commenced in the spermatic cord, and partly descended into the scrotum posterior to the testicle, rendering thereby the diagnosis obscure. In Mr. Lloyd's case the patient had a fatty tumour in the perineum, which



*Engraving from the original photograph.*  
**MR. WHEELER ON SUCCESSFUL REMOVAL, BY THE KNIFE, OF A LARGE LIPOMATOUS TUMOUR.  
FROM A PHOTOGRAPH.**



the year before was in the groin. Mr. Erichsen relates the descent of a fatty tumour from the shoulder to the breast; and, occurring beneath the tongue, they have been mistaken for Ranula.

The development of fatty tumours is from the connective tissue; their capsules are usually thin and fine, but are occasionally strong, as also the processes they send in, which give a firmness like unto a fibrous tumour; to these the name of Lipoma Mixtum has been given.

Induration, suppuration, and sloughing are some of the degenerations they are stated to be liable to; the capriciousness of their growth is well exemplified by the case I have recorded.

ART. XXIV.—*On Lateral Curvature of the Spine, and its Treatment.* By WILLIAM A. ELLIOTT, F.R.C.S.I.; Surgeon to the Whitworth Hospital, Drumcondra; ex-Member of Council, R.C.S.I.

LATERAL curvature of the spine is an affection of the human frame of such importance that few subjects have more engaged the anxious consideration of surgeons well acquainted with the pathology of the subject. Yet it is strange that so much diversity of opinion should still exist in the minds of some, respecting the curative treatment.

The views of many practical surgeons who have devoted attention to this affection, and whose opinions we respect, for the most part agree as to the indications to be fulfilled for the restoration of the spine to its normal position, but they are not so harmonious in their ideas as to the *modus operandi*.

I shall abstain from making any allusion respecting the various modes of treatment which have been suggested, or tendering any opinion as to the relative merits or demerits of the different systems which have been adopted. I wish merely to convey my views relative to the nature of this affection, and state the means which I have successfully employed for the removal of deflections of the spinal column.

We are seldom consulted respecting patients labouring under this affection until some marked change has taken place in the figure. This may be accounted for by the fact that the deviation in the spine usually occurs so insidiously, and its extension is so gradual as to render the invasion of the curve almost imperceptible even to the keen eye of a parent.

I have frequently seen very young children affected with lateral curvature of the spine, but the great majority of patients who come under our observation vary in age, I should say, from five to eighteen years; but the latter period forms no limit, as under certain influences it may occur much later in life.

This affection is frequently traceable in young persons who have been subjected to injudicious educational control, and compelled to observe a restrained sitting posture for some hours consecutively, without due attention being bestowed upon active exercise of the bodily functions.

If, under such circumstances, a person be of delicate constitution, and perhaps partaking of strumous diathesis, such pre-disposing causes will be found to result in the development of spinal curvature.

No doubt we meet with patients labouring under this affection whose constitutions seem healthy and strong—yet this class of persons may be considered rather the exception than the rule in those cases.

Females are more frequently the subjects of lateral curvature than males, which may be accounted for by contrasting the monotonous, sedentary, and comparatively inactive mode of early training of the former with the active amusements and muscular exercise of the latter.

When we have been consulted respecting a case of lateral curvature, sometimes the most prominent feature in the history given to us has been that the growth of the patient had taken place with somewhat unusual rapidity, to which cause—and in some instances correctly—has been attributed the spinal deflection. In cases of this description, I should say the osseous growth had taken place with greater rapidity than the muscular development, and in no part of the human structure is this equality of development more important than that of the spinal column; which is destined to support the superincumbent weight of the head and upper extremities, and should be maintained in its natural perpendicular position, by the strength and equipoised action of the muscles at either side of the cervical, dorsal, and lumbar regions.

Lateral curvature, from my observations, may be considered as originating from constitutional, proximate, and remote causes. I shall therefore succinctly allude to the power such pre-disposing influences must exercise upon the spinal column in producing the varied and abnormal alterations of the figure which result in deformity.

Constitutional causes are referable to imperfect nutrition of the system, arising from deficiency of healthy assimilation and digestion, too low a form of dietetic management, sedentary occupations, and living in close and impure situations. If unhappily the subject of this affection be of strumous diathesis, and suffering from deprivation of many comforts essential to health, we can easily recognize the cause why lateral curvature, when commenced, will, in many instances, be found to increase with considerable rapidity.

Amongst the proximate causes may be enumerated cases which arise in persons labouring under ailments which compel them to remain for weeks or months upon one side only, without the power of changing their position.

When we reflect upon the great flexibility with which the spinal column is endued, the elastic structure of the intervertebral cartilages, and the undue amount of pressure exercised upon their sides, situated at the concave position of the spine, produced by long continued position, we can comprehend how gradually the muscular, osseous, cartilaginous, and ligamentous structures may become affected, until at length a lateral curvature is produced.

We occasionally find curvature proximately resulting from contraction of the chest at either side, caused by pleuritic inflammation, hydro-thorax, and empyema. When the pleura in such cases becomes thickened and adherent to the parietes of the thorax, the subsequent contraction of the membrane will be found to exercise such an amount of traction upon the ribs, as in some degree to approximate them, and in severe cases, to such an extent as almost to produce obliteration of the intercostal spaces.

Pathological specimens of this affection furnish sufficient evidence of the power which pleuritic adhesions and contractions possess in producing deformity of the thorax and spinal column.

Remote causes may be attributed to any ailment which results in shortening in either of the lower extremities, the occurrence of which will, in some instances, produce flexion of the spinal column.

The affections most frequently met with, which tend materially to disturb the symmetry of the lower limbs, are *morbis coxæ*, attended with absorption of the head of the femur or acetabulum, or perhaps a combination of both evils; paralysis, accompanied with structural arrest of development of the limb, congenital luxation of the hip-joint, badly united fractures, contraction of the hip or knee-joints, and some malformations of the foot, also in rachitic

subjects, when one limb becomes deformed, wasted, and shorter than the other.

When persons labouring under any of those affections are either standing or walking, the body will be found to incline towards the weak side, thus producing deflection of the spine, which, however, will disappear by artificially raising the foot at the affected side, so as to compensate for the amount of shortening which may exist in the limb.

I have seldom seen, in this description of cases, the existence of what may be termed true lateral curvature, and therefore think they should not be brought under the same classification.

Two very remarkable cases of lateral curvature came some time since under my observation, and as I am not aware of any parallel cases having been recorded, I think it may be of some practical interest to give their short history:—

Mr. D., aged twenty-four years, was suffering from a severe attack of sciatica, and for about six weeks was in the habit of writing for some hours consecutively at his table, with the affected limb exposed to the heat of a large fire, with his body very much inclined to the right side, and resting upon the table. He informed me that he derived much relief from his pain and suffering, from the heat and the position which I have described. He was unconscious of the alteration which was taking place in his figure, until it was observed by his friends, some of whom ridiculed his appearance, and drew his attention to his state. In the short space of six weeks he had acquired lateral curvatures of the spine in the dorsal and lumbar regions, which were as well pronounced in every respect as if they had existed for a long period of time. So well marked were all the features of this gentleman's deformity, that I was at first rather led to doubt the correctness of the statement which he gave me of his case.

In giving my opinion as to the probable result of his treatment, I informed him that, if he was quite accurate in every respect in the account which he had given me, I had reason to hope his recovery might be rapid. But, on the contrary, should his statement prove inaccurate, I could only entertain strong doubts as to any favourable result from treatment. The sequel proved the correctness of the account given, for in less than two months he had perfectly recovered, no trace whatever of lateral curvature being left.

The second case is that of Miss B., aged twelve years, of healthy constitution, slender formation, and tall for her age, whom I saw in consultation with the late Dr. Cusack. Upon examination we found lateral curvatures of the spine existing in the lumbar and dorsal regions, so well marked as to lead us to believe that such an amount of distortion could not have occurred within the extremely short period of time in which we were informed the alteration in figure had taken place.

The history given of the case by the child's mother was as follows:—On Sunday night she rolled out of bed without sustaining any hurt; she lay upon the floor, between the bed and adjoining wall, during the entire night, where she slept soundly until the following morning. When she awoke she complained of being cold, with general stiffness of the body and limbs. When standing she felt quite unable to keep her body in the erect position. She was placed in a warm and comfortable bed, where she remained until the following day, when it was observed that the child's figure had become much distorted. In four days after the occurrence she was brought to Dublin for advice.

In giving our opinions upon the case, and the probable results of the treatment which we suggested, Dr. Cusack agreed with me in saying that as the deformity had taken place so rapidly, we might fairly entertain hopes that the recovery of the child would prove equally so.

The treatment which I adopt for lateral curvature was steadily pursued for five weeks, at the expiration of which time the patient had completely recovered, no trace of deformity being left.

Previous to entering upon the details of the treatment of lateral curvature of the spine, it may be desirable to reflect upon the different forms which this affection presents, and the effects produced upon the vertebræ, intervertebral substances, muscles, and ligaments.

When the normal muscular action becomes disturbed by flexion of the spine, the dominant power of the muscles at the concave side will be maintained over those at the corresponding convexity, and in well-marked cases of curvature the muscles at the convex side will have lost their perpendicular power of action, and in severe forms of the affection, the inner bundle of fibres will sometimes be thrown across the spinous processes of the vertebræ, thus additionally favouring the action of the muscles at the concave side.

The evils arising from long continued and unequally balanced



action of the muscles will be gradually conveyed to the vertebræ and intervertebral substances at the concave side, which will here be found diminished in their vertical measurements, forming wedge-shaped appearances, the bases being situated at the convex, with apices at the concave side. In several specimens which I have examined, those appearances have been well marked, clearly showing that the greatest amount of pressure upon the bodies of the vertebræ and cartilages existed at the most central part of the concavity, gradually diminishing towards their extreme ends.

The following appearances are beautifully shown in the section of a spine in my possession, which demonstrates not merely the alteration in shape, but also the structural changes produced in the vertebræ and intervertebral substances.

Corresponding to the concavity of the spine, the dense structure of the vertebræ is seen gradually increasing in thickness as it approaches the maximum point or apex of the wedge, and here we find the greatest amount of density, being nearly double that at the convex side or base of the wedge, which here presents an uniform outline of equal thickness. The vertebræ at the concave side are diminished about one-third in their vertical measurement, when contrasted with that of the opposite side of the bone.

The cancellated structure of the bone presents abnormal appearances, the cells being more dilated at the convex side, and gradually diminish in calibre as they approach the most compressed part of the vertebræ.

The intervertebral substances are also much altered in shape, being attenuated at the concave, and gradually increasing in thickness as they approach the convex side.

The transverse processes of the vertebræ are very much divaricated at the most central part of the convexity, and their spaces diminish as they approach the extremities of the curve. The reverse of this is seen at the concave side, the transverse processes being closely approximated to each other at the centre of the concavity, with increase of their spaces as they gradually approach the extremities of the curve.

The ligaments are altered in their proportions, being elongated at the convex and contracted at the concave side, in an equal ratio with the amount of divarication and approximation of the transverse processes to which they are attached.

Being aware that, with all certainty, those structural changes have either taken place, or that they are progressively advancing

in the tissues of the spinal column, we should well consider the likelihood of extent to which the abnormal alterations have reached, as upon this must depend the nature of the treatment which should be adopted, and the benefit to be derived from it. It will also enable us to determine, with some accuracy, whether the curvature be of such extent as to admit of perfect cure, or that in which palliative measures only can be had recourse to, so as to guard as much as possible against any increase of the deformity; and, lastly, that in which the mischief has reached such an aggravated form as to place the case beyond the control of surgery.

The most simple form of curvature with which we meet is that in which a continuous and gradual flexure of the spinal column exists, in some instances only occupying the dorsal region, but frequently extending to the lumbar. The convexity may present either to the right or left side, but in the majority of instances it will be directed towards the former—to whichever side it bends, the shoulder will here be found more prominent than the opposite. There is but little to attract attention when this insidious affection first commences, but after awhile the patient will experience some difficulty in keeping the dress evenly upon both shoulders. In many instances this inconvenience has first attracted observation, but upon close examination there will be found a deviation in the spine, producing inequality in the level of the shoulders, that at the side of the concavity being lower than that of the opposite or convex side.

This may be considered the first stage of the affection which is likely to merge into the second by its gradual extension to the lumbar region—thus the double curvature may be established. When this has taken place, the equilibrium of the body will be restored, and the shoulders will have resumed their natural level.

In some instances the curvature may become developed primarily in the lumbar region, and by its extension involve the dorsal vertebræ; yet this is not the usual course which the affection pursues, and when it takes this unusual direction I have more frequently observed it resulting from some inequality in the length of one of the lower limbs.

During the advancement of spinal curvature the muscles at the concave side, forming cords of the arc, will, by their favoured action, predominate over those at the convex side, and thus prove formidable agents not only in producing lateral curvature, but also torsion of the spine in its perpendicular axis.

When the cervical portion of the spine becomes the seat of flexion co-existing with curvatures in the dorsal and lumbar regions, it will be found seldom to appear until the affection has become well pronounced in the two latter situations.

Should this triple form of curvature exist, the convexity will be found taking an opposite direction to that in the dorsal region, but corresponding with the convexity in the lumbar.

Lateral curvature of the cervical vertebræ may exist *per se*, without any other portion of the spine being engaged. The predisposing causes, however, are different, and the affection comes under the nomenclature of wry neck—a very important subject, the pathology and treatment of which cannot here be introduced.

If we take a posterior view of a person in whom lateral curvature of the spine has become developed in the cervical, dorsal, and lumbar regions, and supposing the curvature to have commenced in the dorsal region, with the convexity directed to the right side, the following appearances will be presented as we trace the affection from above downwards.

In the cervical region the convexity of the curve will be directed towards the left side, with a corresponding concavity to the right. The muscles at the convex side will be found prominent and presenting a well-marked rounded outline; whilst at the concave side they will be contracted, imparting a wasted appearance to the neck in this situation.

In the dorsal region a convexity will exist with either more or less prominence of the scapula, the position of which will be influenced by the extent of the curve and alteration in the shape of the ribs, which become gradually bent at their angles. The spinous processes will be found more closely approximated to the scapula at this side than at the opposite. The ribs will be more divaricated with increased vertical measurement of the intercostal spaces.

Corresponding to this convexity we have the concavity, in which will be found imbedded the scapula, giving to the shoulder a flattened appearance, and when tracing the relative positions of the ribs at this side, they will be found more closely approximated, with consequent diminution in the measurement of the intercostal spaces, which, in aggravated cases, become almost obliterated—the ribs resting nearly upon each other.

The convexity in the lumbar region will present in an opposite direction to that in the dorsal, looking to the left side, and the

concavity to the right. The muscles here present the same appearance as described in the cervical region, and the hollow produced above the crest of the ilium gives to the hip an apparent projection.

All those abnormal changes in the human figure necessarily become aggravated in proportion with the increase of the spinal curvature, and if those alterations could be viewed merely as disturbance in the symmetry of the figure, and unattended with injury to the functions of the thoracic and abdominal viscera, the subject would be to some extent unworthy of the vast consideration which has been bestowed upon it; yet the evils attending it are of such magnitude as to have forced the subject upon the minds of the profession from a remote period to the present time.

Having given this outline of the changes which are presented in the posterior aspect of the body, and then view it anteriorly, we will find the shape of the thorax materially altered, and presenting various appearances, which, in situation and extent, will depend upon the amount of spinal curvature and the side to which the convexity is directed. The right side of the chest will sometimes be found prominent, with depression of the left; but the reverse of this may occur—both sides may be depressed, producing a very hollow condition of the thorax, the antero-posterior measurement of which will be considerably diminished.

Frequently the chest will become depressed laterally at one side, or both may be similarly affected, rendering the sternum peculiarly prominent.

It is unnecessary to enter upon any lengthened details of the varied alterations to which the thorax is liable during the advancement of spinal curvature. The cartilaginous portion of the chest, from its natural elasticity, easily yields and becomes gradually moulded into different forms, which will depend upon the duration and amount of pressure exercised upon it, mediately by the ribs, but immediately by the deflection of the spinal column.

Alterations thus produced in the parietes of the thorax must obviously be attended with injury to the functions of the viscera. Should the convexity exist at the right side, we will here have a larger chamber formed for the lung, whilst that at the left will be proportionally diminished, and in aggravated forms of curvature the left cavity may become so contracted as to produce displacement of the heart to the right side; and this combination of evils may result in embarrassment both to circulation and respiration.

In aggravated forms of lateral curvature, the functions of the

abdominal viscera may also become impaired, from mechanical pressure being exercised upon the liver, intestines, and the other organs contained, any or all of which may become affected in proportion to the amount of deformity resulting from pressure.

We frequently meet with persons who suffer considerably from derangement of the functions of the thoracic and abdominal viscera; yet how often do we meet with others greatly distorted in figure, who seem to enjoy comparative immunity from any of those misfortunes.

The treatment of lateral curvature of the spine should be based upon our pathological knowledge of the affection, and should be our guide in determining upon the proper course to adopt at different ages and under various circumstances.

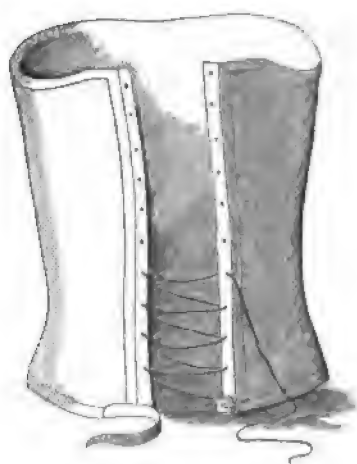
In the early, or infant state, the treatment will be found comparatively simple, and not requiring much elaborate adaptation of support to the figure. But should the curvature remain uncontrolled until certain changes in the shape of the spine become developed, the difficulties in redressing the deformity will be greatly increased; hence the necessity for early attention being directed to the curative treatment.

Perfect success from any form of treatment which may be adopted must depend upon the state of the constitution, age of the patient, extent of the curvature, period of its existence, and amount of structural alteration which may exist.

In the early stage, when the intervertebral cartilages become unduly compressed at one side, the curvature may speedily be redressed by removing the superincumbent weight of the head and shoulders from the flexed spine. The cartilages will then, from their inherent elasticity, be enabled to regain their natural shape; but when alteration in the form of the vertebræ commences, the difficulty attending the treatment will be greatly enhanced, and in proportion as the bony structures undergo alteration, in an equal ratio will depend our expectation of permanent cure.

*Treatment.*—In infants and young children, who are affected with weakness of the spine, in whom a tendency to curvature is observable, I have found a simple support made of leather, so moulded as to accurately fit the figure, to suffice for curative purposes. The leather should be damped with warm water, and during its application the child must be placed in such position as to insure the spine being kept in a straight direction. When the leather has become dry, it must be lined with chamois leather, and





made to lace up the front. Shoulder straps may occasionally be appended to it, so as to insure its being kept properly *in situ*. Under certain circumstances this corset may be worn by day and by night; it can be easily used, as it is productive of neither pain nor inconvenience.

I sometimes have the support freely perforated, so as to render it cool, and also to allow of free evaporation from the surface of the body.

The general state of the constitution must be strictly attended to with the close observance of judicious dietetic management. Tonic medicines should be given when requisite. Bathing or sponging with tepid salt-water will be found essential, after which friction along the course of the spine, and over the entire surface of the body, may be freely used.

Plate XVIII. represents the support to which I have alluded, and which for many years I have been in the habit of using in the treatment of caries of the spine (*vide* my observations upon this subject, published in the *Dublin Quarterly Journal of Medical Science*, November, 1868).

In some forms of lateral curvature, which present only a trifling amount of flexion, the figure may be restored to its natural shape by some of the means which have been suggested by many practitioners. Yet, when this object has been achieved, there is still presented to us the well-known difficulty of maintaining the spine in its proper position.

To meet this requirement many local appliances have been constructed, and their advantages strongly advocated, to several of which I have given fair trial; yet, I confess, without being attended with the satisfactory results which I was led to expect.

I have frequently found in this form of the affection the use of the support, Plate XVIII., to answer every purpose.

When lateral curvature has become well-developed, I have found it requisite to combine mechanical with constitutional and local treatment. At this stage of the affection we shall find difficulties to be overcome which did not exist in the management of the incipient forms. It is at the advanced stage of curvature that so much discrepancy of opinion has arisen in the minds of surgeons respecting the means best suited for redressing the deformity, some of whom, with characteristic ability, have not merely put forward their views, but have also carried them out practically and, as they have stated, successfully.



Whatever differences of opinion may exist respecting the means best suited for the curative treatment of lateral curvature, all must agree that our primary object should be to elevate the figure, so as to restore the curved spinal column to its natural shape, and with it the muscles and ligaments at either sides to their equal length, and by means of suitable appliances to retain the body in its proper position. Until these changes have been effected, we cannot expect the vertebræ and intervertebral cartilages to regain their normal proportions.

In stating my own experience in the treatment of lateral curvature of the spine, I am constrained to say that no form of mechanism which I have used has proved so efficient in fulfilling some of the indications which are most important in the curative treatment of this affection as that which is represented in Plate XIX. It was constructed by me several years since, and by long experience I have been fully enabled to test its value as an adjunct to other means for giving local support to the body. It is somewhat complex in construction, yet simple and effective in its action.

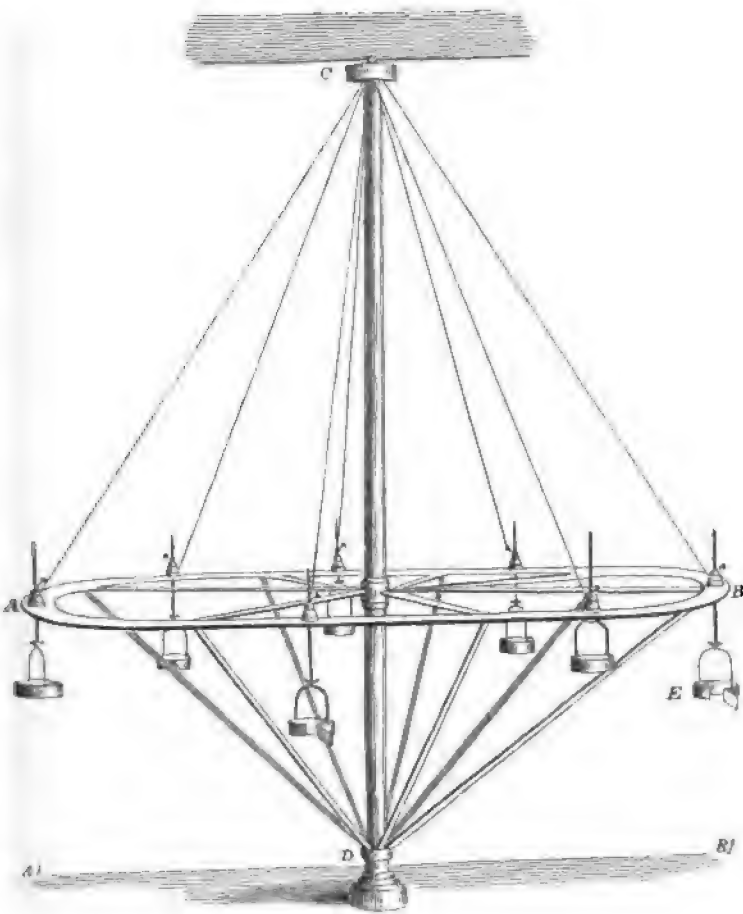
A B represents a circular plane, 14 feet in diameter, which stands 6 feet in height from the floor, and is firmly attached to the shaft, C D, by means of transverse bars. This superstructure is supported by bars, which are attached to the under-surface of the circular plane, and extend from the circumference to the lower extremity of the shaft, when they converge and are inserted at the point D.

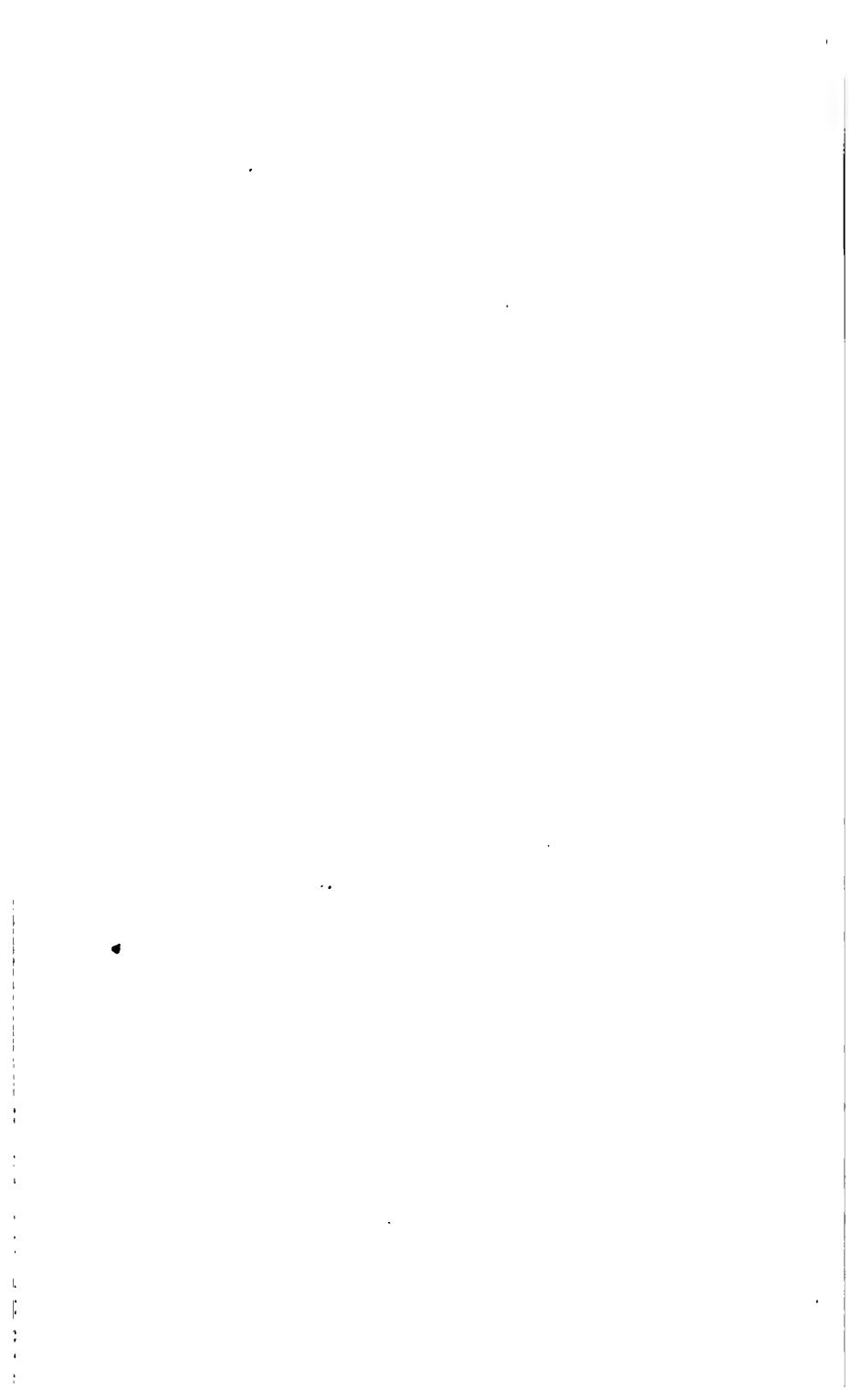
To impart additional strength, lightness, and steadiness to this mechanism, strong wires are attached to the upper part of the shaft, from which they diverge until they reach the circular plane, to which they are firmly attached.

E, a light frame, which opens and shuts at the side by means of a hinge for the reception of the head, the chin and occiput resting upon well-padded surfaces.

To the top of this frame an iron screw is attached, which passes through the circular plane, and also through a spiral spring encased in leather, which rests upon the upper surface of the circular plane. This spring prevents any jerking or jarring sensation being communicated to the head. The rod having reached the summit of the spring, can be raised by means of a screw-nut with handle attached, by which means the height of the frame may be regulated as circumstances require.

The shaft with its appendages rotates upon its axis, the lower





extremity of which terminates in a smooth iron pivot, which is received into a brass socket, supplied with oil, which rests upon the floor. The upper extremity is secured to a strong transverse beam by means of a perforated iron plate, through which passes a round iron spindle.

Although the size of this mechanism is considerable, the friction is so trifling that the slightest movement imparted to it will produce free rotatory motion.

The floor upon which this apparatus rests forms a gently inclined plane, sloping almost imperceptibly from A 1 to B 1, which side is one inch and a half lower than the opposite; thus, in performing the rotatory motion, two inclined planes are passed over from A 1 to B 1; having a downward tendency, it produces a slight amount of elongation of the figure, whilst relaxation is effected in the ascending plane passing from B 1 to A 1.

Gentle elongation of the spine is easily effected by this mechanism, the contracted muscles are brought to their natural length; whilst those which have been elongated are brought into active exercise. In proportion as the figure becomes elevated to its natural position, the head-piece may be raised from time to time.

The leather support, which I have already described, should be applied during the time the patient is standing in this apparatus. It should be made so as to extend from the axilla downwards over the hips, so as to embrace the pelvis firmly. According as the figure undergoes alteration, the leather support will require re-modelling, so as to take the improved shape of the body, and thus maintain it in its proper position.

I wish most distinctly to convey that no rapid traction of the figure should be attempted. Whilst the patient is standing fairly upon the floor the head-piece should be so adjusted as to enable the person to walk easily and without inconvenience.

In the very advanced stages of lateral curvature of long duration, this mode of treatment is quite inapplicable; in such cases any attempt made for curative treatment may be productive of more injurious than good results. Therefore some light suitable instrument, made merely to support the figure as comfortably as possible, is all that can be fairly recommended for such sufferers.

In addition to the means which have been already suggested, I have found much benefit derived from the use of a reclining board, which is so constructed that the part upon which the patient lies

When the cervical portion of the spine becomes the seat of flexion co-existing with curvatures in the dorsal and lumbar regions, it will be found seldom to appear until the affection has become well pronounced in the two latter situations.

Should this triple form of curvature exist, the convexity will be found taking an opposite direction to that in the dorsal region, but corresponding with the convexity in the lumbar.

Lateral curvature of the cervical vertebræ may exist *per se*, without any other portion of the spine being engaged. The predisposing causes, however, are different, and the affection comes under the nomenclature of wry neck—a very important subject, the pathology and treatment of which cannot here be introduced.

If we take a posterior view of a person in whom lateral curvature of the spine has become developed in the cervical, dorsal, and lumbar regions, and supposing the curvature to have commenced in the dorsal region, with the convexity directed to the right side, the following appearances will be presented as we trace the affection from above downwards.

In the cervical region the convexity of the curve will be directed towards the left side, with a corresponding concavity to the right. The muscles at the convex side will be found prominent and presenting a well-marked rounded outline; whilst at the concave side they will be contracted, imparting a wasted appearance to the neck in this situation.

In the dorsal region a convexity will exist with either more or less prominence of the scapula, the position of which will be influenced by the extent of the curve and alteration in the shape of the ribs, which become gradually bent at their angles. The spinous processes will be found more closely approximated to the scapula at this side than at the opposite. The ribs will be more divaricated with increased vertical measurement of the intercostal spaces.

Corresponding to this convexity we have the concavity, in which will be found imbedded the scapula, giving to the shoulder a flattened appearance, and when tracing the relative positions of the ribs at this side, they will be found more closely approximated, with consequent diminution in the measurement of the intercostal spaces, which, in aggravated cases, become almost obliterated—the ribs resting nearly upon each other.

The convexity in the lumbar region will present in an opposite direction to that in the dorsal, looking to the left side, and the

ings are resonant throughout; the air enters freely everywhere; few moist râles here and there over the chest. The liver is enlarged and tender to pressure.

*History.*—As long as he can remember he has suffered from cardiac distress. Dyspnœa, palpitation, and inability to make any severe exertion have been his prominent symptoms. He had an attack of rheumatic fever a few years ago, but he has not suffered more since then than he did previously. Within the last few weeks he has become much worse; hæmoptysis has set in, and his feet have begun to swell.

The treatment was directed to relieve the irritability of stomach, and by lessening the pulmonary congestion and strengthening the action of the heart, to moderate the dyspnœa. It had, however, but little effect. When the patient had been a few days in hospital he became slightly jaundiced. The lower lobe of the left lung became solidified; the hæmoptysis, the dyspnœa, and the cyanosis increased, and he died on July 25th.

*Post-mortem examination.*—The right pleura was universally adherent. The left almost free from adhesions. The lower lobe of the left lung was solid, in the condition of red hepatization. The remainder of the lungs was dark coloured, from pigmentary deposit in their tissue, and congested. The trachea and bronchi were of fair proportions, and the lungs did not appear too small for the size of the body.

The pericardium was healthy and contained a small quantity of fluid. The heart was enlarged. There was considerable dilatation of the right chambers, more particularly of the ventricle, whose walls were firm and hypertrophied. The tricuspid valve was slightly thickened, but quite competent to close its opening. The pulmonary valves and the pulmonary arteries were normal. The right side of the heart was filled by a firm yellow coagulum.

The left ventricle was also dilated and hypertrophied, but not to such a great degree as the right. The left auricle was large in proportion to the size of the left ventricle. The mitral orifice was narrowed. The mitral valve was much thickened, contracted, and bound down by shortened and thickened cordæ tendinæ. On the auricular aspect of its curtains were numerous irregularities (vegetations), particularly one about half an inch long, which grew from the anterior curtain, a little above its free edge, and hung as a slender cord into the ventricle. There was a good deal of fibrous change in the muscoli papillares where they received the insertion of

the cordæ tendinæ. The inner surface of the auricle was extensively diseased. There were numerous vegetations growing from it. These seemed more recent than those on the mitral valve. Just above the auriculo-ventricular orifice there was a spot of superficial ulceration rather less than the size of a threepenny-piece, and higher up there was a small plate of calcareous matter under the endocardium.

The aortic valves were thickened but competent. The aorta was of fair size at its origin, but, even in its ascending part, began gradually to contract; this contraction became much more marked after it had given off the cervical vessels, and from the point of attachment of the ductus arteriosus the calibre of the aorta was not two-thirds its normal size. The coats were thin but otherwise healthy. The ductus arteriosus was completely closed; the auricular septum perfect; the coronary veins were dilated; and the coronary sinus of large size, as were also the openings of the venæ Thebesii.

The liver was enlarged and very fatty. The kidneys were congested, but appeared otherwise healthy. Owing to an accident the other organs were not examined.

The order of events in this case appears to have been as follows:— There was a congenital imperfection in the development of the large blood-vessels. These being too small readily to receive the blood from the left ventricle caused the pressure in the interior of the latter to be always excessive, thus either setting up inflammatory changes in the endocardium and valves, or making these changes inevitable when the patient was attacked with rheumatic fever. The difficulty experienced by the left ventricle in emptying itself, owing to the smallness of the arterial system, of course became much greater when, by exercise, the circulation was hastened. Under these circumstances the blood with difficulty found its way from the lungs into the imperfectly emptied left heart, and pulmonary congestion occurred, giving rise to dyspnœa; and the inability of the heart to overcome the obstacles against which it was labouring, produced the feeling of palpitation from which our patient suffered so much. This excessive strain readily accounts for the hypertrophy and dilatation of the left ventricle, while the high pressure under which the blood constantly stood in the commencement of the aorta sufficiently explains the thickening that was noticed in the sigmoid valves at the commencement of this vessel. It is easy to imagine how prone a heart circumstanced like

**This** would be to suffer in the course of rheumatic fever, and it is **most** probable that the attack of this disease from which the patient **suffered** either caused or greatly aggravated the disease of the **mitral** valve which existed when he came into hospital. I think, **in** tracing the course of the pathological changes, we may neglect **the** stenosis of the mitral orifice, for although this was in itself **considerable**, yet, taking into account the greatly narrowed aorta, **the** auriculo-ventricular opening can hardly be looked on as an **obstructed** part of the circulation. But the free regurgitation **permitted** by the shrivelled and bound-down valve must have been **productive** of the most serious mischief. As far as the left ventricle **itself** was concerned, this permanent patency of the mitral orifice **must** have been a relief, a kind of safety valve, and very possibly it is **to** this that we may attribute the comparatively small amount of dilatation and hypertrophy found in the left ventricle, while to the strain thrown on the auricle by the regurgitating blood is due its **great** size, thick walls, and the great amount of disease found in its lining membrane. But the position of the lungs was now one of the most extreme danger. Behind them was a right ventricle (already dilated and hypertrophied, owing to the obstructions previously existing in the circulation, and now, from the increase in these obstructions, every day growing larger and stronger) sending, at every stroke, an abnormally large quantity of blood, with excessive force, into the pulmonary vessels, while in front were a narrowed aorta, an hypertrophied left ventricle, and a patent mitral orifice, all hindering efflux of blood from the pulmonary veins. It is no wonder, then, that there were constant dyspnœa, cough, frequent hæmoptysis, and utter inability to take exercise, or that, after death, we found the lungs congested, œdematous, tough from interstitial fibrous growth, and pigmented as the result of old hæmorrhage. Nor can it excite surprise that, when to the aggravated pulmonary congestion from which the patient suffered on admission, was superadded pneumonia of half of one lung, he quickly succumbed.

It will be seen that, in such a condition as this lad was in, the circulation is mainly carried on by the right ventricle, and the tricuspid valve forms, as it were, the only fixed point from which the heart can act. To an impairment in the strength of the right ventricle, and a yielding of the tricuspid valve, we may attribute, the additional failure of the circulation which caused the cyanosis dropsy, and albuminuria existing before death.



The condition of the liver in this case was somewhat different from what is generally observed in chronic heart disease. Instead of the uniform mottling of red and yellow producing the appearance known as "nutmeg liver," and which is due to congestion and red atrophy<sup>a</sup> of the central part of each lobule with fatty change in the cells at the periphery, large masses of this liver were changed into a semi-transparent yellow tissue, which shaded off into dark red portions. On microscopic examination, the yellow parts were found to consist of cells retaining their usual arrangement, but in the most extreme state of fatty degeneration, the fat existing, for the most part, in rather large globules.

As has been already said, this lad was badly developed, but he was of fair height for his age, and his muscles were not smaller than was to have been expected, considering the bad health from which he always suffered. The complete arrest of development of the sexual organs was, however, remarkable, and out of all proportion to the deficiency of other parts. There seems to be a close connexion between narrowness of the aorta and arrested sexual development, although it is noticed by few writers; and no one, so far as I know, states what the connexion is. Rokitsansky<sup>b</sup> says an abnormally small aorta is more commonly found in women than in men, and is combined with retarded development generally, and more especially with smallness of the sexual organs. Förster<sup>c</sup> quotes Rokitsansky, but adds nothing new. Dr. Barlow<sup>d</sup> gives several cases resembling that which forms the subject of the present paper, and in most of these smallness of the aorta and arrest of sexual development coincided. (This was so in cases 1, 2, 5, 8. In case 7, although the mammæ were well developed, the girl had never menstruated. Case 3 recovered. Case 4 had a small aorta, but the sexual characteristics were well marked. To this case we shall refer again. In case 6 the aorta was not said to be contracted. In cases 9, 10, and 11, the aorta was small, but no mention is made of the condition of the genitals.)

Dr. Barlow takes a somewhat different view of the series of events in these cases to that which I have adopted. He places the origin of the disease in the lungs, whose sufficient expansion and

<sup>a</sup> See Rindfleisch. *Pathological Histology* (New Syd. Soc.) Vol. ii., p. 89.

<sup>b</sup> *Path. Anat.* (Syd. Soc.) Vol. iv., p. 303.

<sup>c</sup> *Handbuch der Pathologische Anatomie.* Bd. ii. s. 74.

<sup>d</sup> *Observations on Certain Diseases Originating in Early Youth.* *Guy's Hospital Reports* (1st series.) Vol. vi., p. 235, and Vol. vii., p. 467.

development are prevented, either by congenital defect or by the obstructions opposed to the respiratory movements by pericardial adhesions formed early in life. The narrowness of the aorta observed in many of his cases, he looks on as secondary. He thinks that obstruction occurring in the lungs hinders the passage of blood into the left heart, consequently but little blood can pass into the aorta, which adapts itself to the small bulk of its contents. The great objection to this view is, that in most of these cases the left ventricle is found dilated and hypertrophied. Dr. Barlow supposes that the pulmonary obstruction is propagated backwards through the right heart and venous system, and at last is felt by the left ventricle, which becomes hypertrophied to meet the increased difficulties of the circulation.

This succession of events would undoubtedly occur, but before the left ventricle could feel the obstruction there would be increased tension in the aorta, to which the vessel would have to accommodate itself by dilating. In case 4, where the origin of the disease was mechanical pressure on the trachea, the aorta was small, and "the left side of the heart was rather diminished in capacity and substance." In this instance, as already mentioned, where Dr. Barlow's explanation appears to hold good, and where there is no reason to suppose a congenital defect of the aorta, the appearance was manly and the muscles powerful. In case 10, which Dr. Barlow particularly notices as proving the secondary nature of the aortic narrowing, the ventricle was small, but here the mitral orifice was "much and rigidly contracted." In this case, as in 9 and 11, in which the origin of the disease was probably in the mitral opening, and in 4, in which it certainly lay in mechanical compression of the trachea, the pulmonary artery was dilated (of fair size in 11), whereas in cases 1, 2, 5, 8, and perhaps 6, where the disease seems to have had its commencement in the aorta, the pulmonary artery, as well as aorta, was small, although the right ventricle was hypertrophied. I think this points strongly to a primary want of capacity in the arterial system, both pulmonary and systemic. That in these instances of narrowing of the aorta the hypertrophy of the left ventricle is not greater, is, I think, to be attributed to the early period at which mitral regurgitation occurs. Thus, in case 1, although there was said to be little or no disease of the mitral valve found *post-mortem*, yet, during life, each stroke of the heart was accompanied by a hoarse bellows' sound; and in cases 2, 5, 6, 7, 8, there were the physical signs

during life, and the appearances after death, which proved that mitral regurgitation took place.

Dr. Barlow's cases may, then, be divided into two classes. In the first, the primary cause of disease lay in a congenital smallness of the aorta. On this followed hypertrophy and dilatation of the left ventricle (relieved mostly by mitral regurgitation), pulmonary congestion, and hypertrophy of the right ventricle. In this class the pulmonary artery was often narrow, notwithstanding the great strains in its interior, and arrest of sexual development was the rule. The imperfect development of the respiratory organs may here be looked on as secondary, and fairly attributed to the same cause which produced the arrest of sexual growth. To this class belongs the case recorded at the commencement of this paper.

In the second class the origin of the disease lay behind the left ventricle, either in the mitral valve, or, as in case 4 (possibly also in case 6, where the trachea was very small and the genitals were well developed), in the lungs. Here the left ventricle showed much less symptoms of strain, and was generally not above the normal size or thickness. The lungs were congested, right ventricle hypertrophied, and the pulmonary artery dilated. In these cases there was no arrest of sexual development.

It would hence appear that a very close relation subsists between congenital smallness of the aorta and arrested development of the sexual organs, and that in obscure cases the existence of the latter condition may help us in the diagnosis of the former.

#### CASE II.—*Pneumonia of Lower Lobe of Left Lung; Meningitis.*

Ed. P., a labourer, aged fifty-two, admitted July 24th, 1873. He is a large, strongly-built man. His appearance is heavy and depressed; face flushed; herpes on the upper lip; tongue coated and moist. He complains only of pains and stiffness in the limbs. Has some cough, with scanty, viscid, rusty expectoration. The lower lobe of the left lung is solid, as evidenced by dulness, bronchial breathing, &c. Pulse 116; temp. 101°·9.

*History.*—Present illness began about seven days ago with a rigor, followed by pain and stiffness in the back and limbs; there seems to have been neither stitch in the side nor dyspnœa. He has never had any serious illness before; his habits have been temperate. He was ordered small doses of digitalis, and turpentine stupes to the side.

July 25th, morning.—Pulse 112; resp. 32; temp. 101°3. Evening—Pulse, respiration, and temperature same as morning. No alteration in symptoms. Patient slept last night, and has had no delirium or headache.

July 26th.—A coarse crepitation, at the end of inspiration, is audible over the inflamed lung. Patient feels much better; had a good night; pulse 92; respirations 30; temp. 99°7..

In the afternoon he appeared strange in his manner. He answered questions incoherently, but made no complaint. He soon fell into an unconscious state, in which he lay on his back with his eyes half open. He took no notice of what was passing about him, and could not be roused to answer questions. His teeth were clenched, and he swallowed with difficulty. His pulse rose to 120; respirations to 40; and temperature to 104°; and a most profuse perspiration broke out over his body. His pulse was at first of good strength, but towards morning it began to fail, and he died at 8 a.m. on the 27th. There were no convulsions.

*Post-mortem examination.*—Both pleuræ were adherent. There was solidification of the whole lower lobe of the left lung, except the extreme edge, which was crepitant. The solid portion was dark and granular. The remainder of the lungs was deeply pigmented, congested, and yielded, on section, a frothy fluid, in no very large quantity. Heart and great vessels healthy; their cavities occupied by firm *post-mortem* clots. Abdomen not examined.

*Brain.*—Dura mater and arachnoid healthy. The meshes of the pia mater occupied by an opaque yellowish-white exudation of fibrino-purulent appearance. This covered, more or less, the entire cerebrum, but was most abundant over the convexity of the anterior lobes, where it formed a layer more than a quarter of an inch thick, and, but to a less degree, in the sub-arachnoid spaces at the base of the brain. It was of firm, semi-solid consistence, did not flow out on section, and could with difficulty be displaced by pressure.

The infiltrated pia mater separated with extreme facility from the brain, and formed an exact mould of the irregularities of the convolutions.

The brain itself appeared perfectly healthy. There was no softening of any part. No undue vascularity, but the puncta vasculosa were well marked. The ventricles contained about one and a-half ounces of clear fluid.

This case seems worthy of record in consequence of the extreme rarity of meningitis as a complication of pneumonia. Among 959 cases, Huss\* gives only two of this complication, and both these proved fatal.

But still more remarkable than the mere occurrence of this complication were its sudden appearance and rapid termination. On the morning of the 26th, all the symptoms appeared most favourable; the patient had passed a good night, felt well, his pulse and temperature had declined considerably; crepitus redux was heard in the lung, and everything promised a speedy convalescence; and yet, in the course of a few hours, coma supervened almost suddenly, and persisted till death.

It is difficult to believe that any affection of the brain was present at the time of the morning visit on the 26th, and it is equally hard to understand how such an amount of effusion, as was found *post-mortem*, could have been produced between this and the time of his death. The rapidity seems to have been so great as to cause pressure symptoms from the first without the usual precursory signs of irritation.

The profuse sweating observed in this, as in so many other cases of increased intracranial pressure, is worthy of notice, although our small knowledge of the physiology of the sudoriparous glands makes its explanation impossible.

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ART. XXVI.—*On the Use of Holt's Winged Catheter.* By E. G. BRUNKER, M.D., F.R.C.S.; Surgeon to the Louth County Infirmary and Gaol.

I FEEL that some acknowledgment is justly due to Mr. Holt for his introduction of the winged catheter, which, I am confident, will be found to be a very great convenience to the surgeon who has charge of a case requiring the constant use of a catheter, as well as a very great comfort to the patient. I have, at present, in my infirmary, a patient suffering from paraplegia, caused by a cart falling on him and fracturing some of the dorsal vertebræ. When raised after the fall, it was found that he had lost all power of motion and sensation of the lower part of the body, and he has never since been able to pass urine naturally, or to retain fæces.

\* Article "Pneumonia," by Wilson Fox. In Reynolds' System of Medicine, III., 657.

Shortly after the accident he was visited by Dr. Barbor, of Carlingford, who drew off the urine, and continued to do so, as often as was necessary, until the patient was removed to the infirmary, about the 31st of October—three or four days after the injury.

For a few days after his admission I used the ordinary elastic catheter, but finding some difficulty in its introduction, and the urethra becoming irritable, I had recourse to one of Holt's "winged catheters" of full size, with stilet, leaving it in the bladder. I did not find the least difficulty in its introduction; on the contrary, I think I never passed a catheter with so much ease. The patient never experienced the least annoyance from its presence, and the catheter retained itself in the bladder without any of the usual fastenings. At the end of five days I withdrew it, with great ease, and found it was not in the least corroded, nor was there any concretion upon it.

I have continued the use of this catheter now for more than a fortnight, and, of course, I expect to have to do so, as the poor patient is in a hopeless state—the nates having begun to slough, notwithstanding every care and the use of the water-bed, his posture being frequently changed.

My object in reporting this case is to draw the attention of surgeons of hospitals, poorhouses, &c., to the use of this instrument in all cases requiring the retention of a catheter in the bladder, as it will save the surgeon a great deal of trouble and much anxiety, and, at the same time, will afford the patient great comfort.

NOTE.—A description of the catheter will be found at p. 189 of Volume LXI., January to June, 1870, of Braithwaite's Retrospect. Maker's name, the Messrs. Baker, 244 High Holborn, London. It may also be had of Messrs. Fannin, Grafton-street, Dublin.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*The Beginnings of Life ; being some Account of the Nature, Modes of Origin, and Transformations of Lower Organisms.* By H. CHARLTON BASTIAN, M.A., M.D., F.R.S. Two volumes. London: Macmillan & Co. 1872.

THE literature of the subject of spontaneous generation reminds one of the contest between the artillerist and the armour-plater in modern times, and these volumes of Dr. Bastian's are the Woolwich Infants of the discussion, intended to demolish the twenty-inch defences of the old doctrine, "*omne vivum ex ovo*," erected by Pasteur, Crace Calvert, and others of the Biogenetic school of philosophers.

A great deal of undue importance has been attributed to such experiments as those of which part of this book is the record. Those who, with the majority of the intelligent biologists of the present day, are believers in evolution, must admit that at some time or other in the past history of our planet the chemical and physical forces of nature produced the compound protoplasm, of whose properties life is the sum, and to such it matters little, except as a subject of scientific curiosity, whether or no the primitive conditions can be reproduced in the laboratory. And to those who reject the evolution doctrine, the possible sources of error are so numerous that it can scarcely be expected that any series of experiments will serve for their conversion.

Mr. Bastian's book is divisible into two parts. The first deals with the question of the spontaneous generation of living matter from non-living or inorganic materials (abiogenesis or archebiosis); the second with the origin of different specific forms from similar sources (heterogenesis or xenogenesis).

The introductory part deals with the nature and source of vital forces and of organizable matter, and Mr. Bastian proceeds at unnecessary length to detail well-known facts and statements regarding the correlation of the physical forces, &c. Then, having detailed various views on the nature of life, he states, but does not

rove, that there is a gradual passage from the not-living to the living. A little more detail, in the way of fact, on this point would have been desirable. He proceeds to notice the synthetic formation of organic compounds, the relation of colloid bodies in general, and of protoplasm in particular.

A long review of the various cell theories follow, and in Chapter V. a detailed account of the mode of origin of reproductive units, in which he teaches that in all organisms the ovum or spermatozöon arises heterogenetically from a primitively non-cellular protoplasm; also that the amœboid corpuscles of the fluids of higher animals arise in a similar manner. Summing up this part of the subject, he formulates five ways in which living matter may be produced:—

- |   |   |                |
|---|---|----------------|
| "1. New origination from non-living sources,  | - | Archebiosis.   |
| "2. Fusion of living particles floating in a fluid<br>medium as in the formation of nematode ova,   | } | Biocrasis.     |
| "3. Fission of living masses, - - -   | - | Biodiæresis.   |
| "4. Rearrangement of living particles, whereby they<br>become fitted for independent existence, -   | } | Biocœnosis.    |
| "5. Life transmission by the origination of new growth<br>centres, as in the formation of the sperm cells<br>and ova of higher forms, - - - | } | Bioparadosis." |

It may be gravely questioned, whether these processes are so related predicamentally as to admit of tabulation.

Passing from this introduction, which might with very great advantage be cut down to a very much smaller size, we reach the section on Archebiosis, and a long section is devoted to what is well known to all interested in the subject, viz., the early Needham-Spallanzani stage of the controversy; after which he reviews the conditions necessary for the production of bacteria and other simple forms of organized matter. In this chapter he refers to the views of Hallier, who regards them as spores of parasitic fungi, a view in which he is supported by Polotebnow, Huxley, and many others; though, as Mr. Bastian thinks, on insufficient grounds. Hallier further considers that these fungi may become endophytic in our common cereals, and thus may be concerned in the spread of zymotic diseases. Strangely enough, Dr. Burdon Sanderson, who has done such solid work in relation to the formation of these bacteria, while dubious on the subject of their contagion-relation, has called them microzymes, a name which Bastian—we think properly—objects to, as involving an unproved theory.

Chapter VIII. contains a most important discussion on the limit



of vital resistance to heat. Here he quotes the well-known views of Pasteur and of the Commission of the Société de Biologie, as well as a series of experiments of his own on the same subject. On this vitally important branch of the subject we have the advantage of a more recent series of experiments by Mr. Bastian (P. R. S., Nos. 143 and 145, 1873), in which he has exposed bacteria to crucial experiments, and shown satisfactorily that their power of vitally resisting heat is very limited indeed. In all cases these organisms were destroyed by a heat under that of boiling water. The recent researches of Cohn on this subject are of very great importance.

The experimental part of the subject presents one feature of novelty, viz., the use of closed flasks, containing a partial vacuum. By this means he gets rid of the important source of error, from the possibility of germs being admitted in the air, besides the possible advantage that such weak chemical actions as that whereby protoplasm is formed are facilitated by the removal or diminution of atmospheric pressure. In the first set of experiments detailed the fluids were heated for over ten minutes to 212° F., then hermetically sealed while boiling, the materials being filtered organic infusions, acid in reaction. In all these Vibriones, Bacteria, Torulæ, Leptothrix, &c., were developed in a few days. The second series consists of experiments in which the fluid used was a saline solution—ferric and ammoniac citrate alone, or with less than half a grain of wood; potassic, and alumina sulphate, with tartar emetic; tartar emetic and sodic phosphate—all submitted to the same conditions, and in most of these Torula cells and minute organisms appeared.

The bearing of these observations on fermentation are very important, and Mr. Bastian proceeds to discuss the various theories received in the light of his experiments, and to demolish Pasteur's doctrine that the organisms Torulæ, &c., found in fermenting fluids, are the causes of the chemical change. In support of Liebig's Physical Doctrine of Fermentation, he instances Dobereiner and Schutzenbach's processes for the production of acetic acid, in which a fungus is never developed. That free oxygen is not essential to this process he shows by his former experiments, but explains the preservation of meats, &c., in vacuo by the exclusion of light and the absence of a vacant space from the filling of the tins—reasons which only show Mr. Bastian's comparatively little experience in the examination of the tins of Australian meat now commonly in the market. In five tins examined for the verification of this, the sudden rush of air on cutting the lid showed that a partial vacuum

d exist inside, and yet no leptothrix filaments or organisms of the nature were detectable until three days after the opening.

Three kinds of fermentations are described by Mr. Bastian :—  
1. Synthetic, in which compounds of higher molecular complexity are evolved. 2. Analytic, in which a complex body breaks up into simpler products. 3. Analytico-synthetic, in which both changes occur simultaneously; to this we will recur.

In the third series of experiments made at higher temperatures, infusions of meat, turnip and other vegetables, and animal matters, exposed for twenty minutes to a heat above 270° F., then maintained at 70°–80° F., for eight days in sunlight, were very variable, some exhibited Bacteria, Torulæ, and Leptothrix, Protamœbæ, and various others did not. When similar experiments were made with a heat of 293° F. and 307° F., the same variable results were obtained.

The panspermic hypothesis is next reviewed by Mr. Bastian, and experiments given in disproof of the existence of living germs in the atmosphere. In relation to this the author calls attention to a remarkable fact, viz.—that some fluids which may be kept for long periods without undergoing decomposition, are capable of being made fermentable by the addition of any decomposing organic material. Such fluids Bastian terms “inoculable,” because capable of being fermented by inoculation with an organic fluid. In this fact Mr. Bastian sees the explanation of the celebrated cotton-wool experiments, the particles kept out by the wool being the atmospheric organic decomposable matters, not necessarily germs. Urine, turnip infusion, yeast-water sweetened—all can thus be preserved; but if to the turnips a few grains of cheese be added before boiling, the wool will not prevent the formation of organisms. He has also shown that some of the fluids which remain pure in vessels plugged or with long bent necks, become fœtid when shut up *in vacuo*.

Thus far Mr. Bastian has added to the experimental proofs of Abiogenesis, and his experiments are *primâ facie* very much more reliable than some of those of the French experimenters, as his described organisms were always the lowest protista. In the view of all these and other experiments, it would require a very large mass of evidence on the other side to disprove the possibility of the experimental origination of life and living forms.

Mr. Bastian's second part consists of a defence of heterogenesis. Of course any one who is a believer in evolution must accept the truth of a slow heterogeny, but our author is not content with this,

he wishes to show that changes may take place at more rapid rates, and his evidence is as follows:—

1. While disputing Professor Huxley's views on the relationships of *Torulæ*, *Bacteria*, and *Penicillium*, he believes that *Bacteria* may grow into *Vibrio Leptothrix* and *Spirillum*—that the granules of the prolikerous pellicle may be seen with *Monades* and *Leptothrix*—that ciliated infusoria were seen emerging from globular forms in the pellicle which were *supposed* to have been formed of the granules of the pellicle. He also relies largely on the very remarkable, if reliable, descriptions of Gros and Nicolet. The former author has described the most wonderful metamorphoses of *Euglenæ* into *Rotifers*, *Nematodes*, and *Tardigrades*, which it would be very well to see fully confirmed before they are depended on in support of any position. The looseness of the observations, and their being unconfirmed by observers of acknowledged carefulness, leads one to put little trust in them. Microscopic observations are open to so many sources of error, even when carried on by the most skilful, that without a very solid foundation of evidence, such theoretically great changes are scarcely credible.

That a moneron may be produced heterogenetically is not a very great strain on one's faith, but that the ciliated embryo of a *Nais* or an *Acarus* may be thus produced, is nearly as hard to believe as would be the heterogenetic development of a man or an elephant.

The first part of Mr. Bastian's book is the more interesting and important, but until very much more evidence can be adduced on the second point, such rapid heterogeny as that described must be regarded as not proven.

It is a pity that Mr. Bastian did not study brevity, as it would be a great advantage if this book were cut down to one half its size—as could easily be done by the exclusion of much useless and cumbrous verbiage.

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*Essays on Diseases of Children.* By WILLIAM HENRY DAY, M.D.; Member of the Royal College of Physicians, London; Physician to the Samaritan Free Hospital for Women and Children. London: J. & A. Churchill. 1873. Small 8vo, pp. 191.

DR. DAY has for several years been well and favourably known as an essayist on the interesting subject of the affections of childhood.

From his position as medical attendant of the Samaritan Free Hospital, he has enjoyed unusual opportunities, and these he has not been slow to turn to good account.

The present book is a reprint of papers and essays contributed at various periods to the *Journal of the St. Andrew's Graduates Association*, to the *Lancet*, and *British Medical Journal*, and, lastly, to the Harveian Society of London. The originally fragmentary nature of the groundwork is, no doubt, largely to blame for the somewhat pedantic or verbose style in which Dr. Day commences some of the essays—notably that on “Debility in Children,” and that on “The so-called Remittent Fever of Children”—which tends to detract from the value of his observations.

But, on the whole, we have read these essays with interest. The introductory remarks in Chapter I. are indeed admirable, and we gladly extract the recapitulation with which that chapter concludes. He says:—

“To sum up these points, it is to be observed that I have laid stress—

“1. On the peculiar forms which disease assumes in childhood, as distinguished from the forms of the same disease prevalent in adults ;

“2. On the rapidity with which functional sometimes passes into organic mischief during the period of bodily and mental development, so that no ailment should be considered too trivial to receive attention ;

“3. On the great importance of looking to constitutional symptoms rather than to local derangement, because the primary disturbance may be of greater moment than the effect ;

“4. On the necessity of looking to diet, and adapting the quality and quantity of the food to the age and natural strength of the child ;

“5. On the importance of selecting medicines, when medicine is absolutely demanded, from that class which will support the bodily powers, and assist in maintaining each function as nearly as possible at a normal standard.”

Judging from the essay on “Infantile Remittent Fever,” we would say that Dr. Day's views on the subject of fever generally were sound. He regards the affection to which, *for convenience*, the name “Infantile Remittent Fever” may be given, as essentially the same as typhoid. It would be well if a numerous class of practitioners, who at present are in the habit of describing examples of the malady in question in children under the term “Simple Continued Fever,” were to recognize this truth. Dr. Murchison,

in his splendid work, puts this very well. "Medical men," he says, "often decline to call a fever 'enteric,' in which, as often happens, there are no enteric symptoms, and hence the intestinal lesion is apt to be overlooked until it unexpectedly becomes a source of danger. This mainly accounts for the circumstance that, in the returns of the Registrar-General, deaths are weekly ascribed to 'simple continued fever,' a disease which in twenty-five years has not once been fatal in the London Fever Hospital."\* [The italics are ours.]

In treating of "Head-ache in Children," Dr. Day had to deal with an admittedly difficult and intricate subject; but the classification of the causes of the symptom given on page 122 is sufficiently accurate and complete. Fault may, however, be found with the author's illustrations of some of the forms of head-ache included in this classification, and, we think, justly so. Thus the second case given as illustrative of "*cerebral head-ache*" (the term, though peculiar, is strictly correct) "attributable to injury" (page 125), is—to our mind, at least—an undoubted example of a constitutional and hereditary predisposition. It is distinctly mentioned that the family of the patient's father was *phthisical*, and the patient, a boy aged seven, with dark hair and blue eyes, did not walk until he was three years' old, and he was inclined to be rickety. The accident to which the head-aches were attributed happened only three weeks before he came under treatment, but it is not said when they first appeared, while "his mother has often noticed him yawning and sighing in the day-time." The case is certainly "*non-proven*."

Again, the sixth form of head-ache is defined as that "depending on some intricate change in the cerebral membranes or tissues of the brain," and is illustrated by notes of seven cases, in not one of which (fortunately for the patients) was there an opportunity of making a *post-mortem* examination. And yet, in answer to the question, "What is the pathology of this state?" the author is bold enough to write as follows:—

"Conjecture disposes one to think that the brain texture is more exsanguine and less firm than in health, and that there is in most cases at the base of the brain, about the neighbourhood of the pons Varolii and fissure of Sylvius, and in the lateral ventricles also, some amount of serous effusion capable of absorption under favouring circumstances, and leading to the complete recovery of the patient. If the case should take a downward course, there would be nothing inconsistent with further

\* The Continued Fevers of Great Britain. Second edition. 1873. P. 420.

degenerative changes, such as we witness in the true forms of meningitis. We may then find injection and opacity of the arachnoid, increased vascularity of the pia mater, serous effusion, fibrine, and even pus."

Now, to say the least, this is rather imaginative pathology, and we are sure it can serve no good purpose. But, curiously enough, it is at the same time *materialistic* beyond all bounds. Our own impression is that in many of the cases quoted by Dr. Day, if an opportunity had been given of inspecting the base of the brain, &c., no morbid appearances whatever would have been detected. This, at all events, is just as likely as that we should have found anæmia and softening, or congestion, serous effusion, fibrine, and pus.

The remaining chapters—on "Laryngeal and Tracheal Irritation in Young Children" and on "Croup"—are very interesting and instructive. Under the first of these headings Dr. Day describes a condition, or an affection, distinct from both bronchitis and croup. It is apyrexial in its early stages, but characterised by the presence of a short, shrill, barking cough. If neglected, it may pass on into true bronchitis, or pneumonia. The symptoms, as detailed, resemble those of the first stage of a severe coryza in the adult, *loco morbi mutato*. In fact, if we mistake not, we have ourselves experienced an attack of this identical "*laryngeal irritation*" not many months since. Speaking of the treatment of croup, the author very properly assigns the first place among remedies to the *vapour bath*.

Although we have felt it our duty to criticise this book in some points, we should not be doing justice to Dr. Day, or to ourselves, did we not recommend it to the profession as of considerable value, and, above all, as being an earnest of substantial and sterling work yet to be done by the author, should his life, happily, be spared.

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*A System of Dental Surgery.* By JOHN TOMES, F.R.S., and CHARLES S. TOMES, M.A. Second edition. With 263 illustrations. J. & A Churchill, London. 1873.

WE hail with much pleasure the second edition of this admirable handbook on Dental Surgery, containing, as it does, all the recent and valuable additions that have been made to our knowledge of this subject. The work is profusely illustrated with characteristic and well-engraved woodcuts, the value of which can hardly be over-

estimated, conveying more information at a glance than many pages of even the clearest description.

The development of the jaws and teeth, as well as the eruption and irregularities of the temporary and permanent series, are most minutely and accurately described; and two exhaustive chapters on the Dental Tissues—in which the opinions and observations of Waldeyer, Hertz, Kölliker, Beale, Huxley, Czermak, and others, are discussed at considerable length—complete the physiological portion of the work.

The various instruments used in the treatment of dental caries, and the necessary processes and precautions to be taken to secure a successful and useful result in the operation of “filling” or “plugging,” together with the various preparations of gold or other fillings suitable in the varying forms of this disease, are necessarily described in the most practical—indeed, we may add satisfactory, way; and the chapter on the operation of Extraction is one of the best on the subject we are acquainted with in any work, and well worthy the attention of those who are sometimes compelled to operate in the absence of the professional dentist. Large additions have been made to the text on the following subjects:—Neuralgia, dentigerous cysts, odontomes, secondary affections resulting from the irritation set up by dental disease, &c., and a full discussion of the whole subject of dental caries has been added in the form of an Appendix, in which a summary of the conclusions to be drawn from recent investigations will be found.

The views expressed by Mr. Tomes in the chapter on the diagnosis and treatment of that most troublesome and distressing affection known as Neuralgia, are taken from the dental stand-point, in contra-distinction to the medical opinions of Trousseau and Anstie.

Neuralgia has been recently defined as “a disease of the nervous system manifesting itself by pains which, in the great majority of cases, are unilateral and which appear to follow accurately the course of particular nerves, and ramify sometimes into a few, sometimes into all the terminal branches of those nerves. These pains are usually sudden in their onset, and of a darting, stabbing, boring, or burning character; they are at first unattended with any local change, or any general febrile excitement. They are always markedly intermittent—at any rate, at first, the intermissions are sometimes regular, and sometimes irregular; the attacks commonly go on increasing in severity on each successive occasion. The intermissions are distinguished by complete, or almost complete, freedom

from suffering, and in recent cases the patient appeared to be quite well at these times. Except for some short time after the attack the parts through which the painful nerves ramify remain sore and tender to the touch. In old-standing cases, however, persistent tenderness, and other signs of local mischief, are apt to be developed in the tissues around the peripheral twigs. Severe neuralgias are usually complicated with secondary affections of other nerves, which are intimately connected with those that are the original seat of pain; and in this way congestion of blood-vessels, hypersecretion, or arrested secretion from glands, inflammation and ulceration of tissues, &c., are sometimes brought about." To this Trousseau (*loc. cit.*) would add that there is, invariably—or, at all events, so constantly that the character is available for diagnosis—tenderness over some of the spinous processes, in the case of the fifth nerve over the first two cervical vertebræ; though this statement is challenged by Dr. Anstie (*op. cit.*, p. 10), who says that these tender points "are not *characteristic* of neuralgia" [the italics being his], and that they may be present in a variety of other affections.

Mr. Tomes' experience, however, does not enable him to speak very positively as to the constancy or the contrary of this tenderness over the first two cervical vertebræ in cases of neuralgia distinctly dependent on the teeth, though he has more than once met with it.

Valleix first pointed out, under the name of "foci," the tendency of neuralgia to affect certain spots, and in cases in which the cause of the pain is not readily recognized after a careful examination of the teeth, the situation of the pain will afford some help. When the pain is most severe in the parietal region, or at the upper part of the temple, the affected tooth is generally in the upper jaw and far back in the mouth; when it is referred to the eye, which is rather rare, the tooth may be found in any part of the upper jaw. Pain referred to the ear or the region of the temporo-maxillary articulation, is almost diagnostic of a lesion in the lower teeth, generally towards the back of the mouth.

"Although in most cases of dental neuralgia, pain is confined to the various branches of the fifth nerve, in any of which it is common, it may extend to the side of the neck, to the shoulders, and over the arm of the affected side, which may be subject to a sense of lassitude and weariness, almost amounting to slight paralysis (Salter)."

Dr. Gross, of Philadelphia, has recently described a remarkable



form of neuralgia occurring in edentulous jaws, or in spaces from whence teeth have been removed:—

“In these cases the pain is generally distinctly localized, its seat being the wasted alveoli and the gum which overlies them. It occurs exclusively in elderly persons, and comes on gradually, proceeding, however, from bad to worse, until the patient's health is worn out by constant suffering. Like other forms of neuralgia, it is most severe at periods of depression, and is often temporarily relieved by the administration of quinine.”

In each case recorded, Professor Gross, after the failure of other remedies, resorted to the excision of the affected portion of the alveolus, which in most cases effected a permanent cure, and in all produced great alleviation of the symptoms.

Dr. Cayley divides facial neuralgia into two classes—the periodic and irregular. Of the former he mentions that the attacks are usually daily. When the disease is due to malaria, they are prone to come on in the morning, and, when due to other causes, in the evening. It may be here mentioned that the attacks, when dependent on diseased teeth, almost always come on in the evening.

Dr. Anstie regards the posterior roots of the spinal nerves as the real seat of neuralgia, and holds that the essential condition is *atrophy, which is usually non-inflammatory in its origin*. But the instantaneous cure of a neuralgia which we not uncommonly meet with after the extraction of a tooth, or even after the destruction of the nerves by arsenious acid, appears to me to clearly indicate that neuralgia is possible without much central degenerative change; or, at all events, that the central change is not enough to produce the neuralgia after the cessation of the peripheral irritation.

Mr. Tomes enumerates the following causes of neuralgia:—“Chronic inflammation of the pulp; difficult eruption of wisdom teeth; secondary dentine in the pulp cavity; decomposition of a dead pulp in a confined space; exostosis; alveolar periostitis, which may depend on the escape of decomposing matter through the pulp canal, or on roughening of the fang by absorption; exposure of sensitive dentine (rarely); and, in fact, almost every diseased condition which affects the teeth. Besides these, facial neuralgia may be due to periostitis in any of the bony canals through which the nerve trunks pass, or to osteophytes diverting them from their course. Inflammation of the mucous membrane, or the periosteum of the antrum, may involve the superior dental

nerves which pass along the antrum in open grooves and not in bony canals, and so give rise to neuralgia."

"The sacrifice of the tooth is not always necessary in cases of facial neuralgia; for example, when it is due to chronic inflammation of the pulp, it may almost always be caused by the destruction of the pulp by arsenious acid; but when it is due to affections of the alveolar periosteum, or difficult eruption of wisdom teeth, &c., the teeth should be promptly removed.

"There are, however, many cases of neuralgia really dependent on the teeth, in which it is almost impossible to be certain of this before their removal. For instance, there may be many stumps in the mouth, any one or all of which are perfectly capable of setting up the irritation, but there may be no symptoms to identify any particular one with the disease. Where there is the least sign of inflammation about the stumps, I should not hesitate at advising the removal of every one; and even where there is not, in a confirmed case of neuralgia, useless stumps, which may, perhaps be exostosed, are far better away. Nevertheless, I am not inclined to fully endorse the great caution with which Dr. Anstie speaks of the extraction of teeth—the less so as I think he somewhat underrates the influence of teeth in producing neuralgia. Whenever teeth can be found on the same side as the neuralgia which are in one of the conditions which have been described as likely to set it up, the dental surgeon should, in my opinion, have not a moment's hesitation in extracting them.

"His course becomes rather less plain when there are only carious teeth, with no exposure or near approximation to exposure of the nerve, or where there are numerous apparently healthy stumps.

"The removal of the exciting cause is often followed by a severe paroxysm of pain, and these paroxysms may recur from time to time with lessening intensity for some days, so that it is advisable to warn the patient not to expect an immediate cure.

"It has already been mentioned that the paroxysms have a tendency to periodicity, often recurring with great regularity; the coming attack may often, and, indeed, generally, be warded off with a full dose of quinine. But when quinine is given with this object, it must be given in large doses—from five to eight grains for an adult; small doses, frequently repeated, are often

perfectly ineffective in a patient who is at once relieved by a full dose. The large dose is better tolerated if a saline purgative be given some two or three hours before taking the quinine, which should itself be administered about an hour and a-half before the time at which the recurrence of the pain is expected."

The various points suggested by Mr. Tomes are all illustrated by remarkable and striking cases, some of which, we regret, we cannot afford space to insert. From the large additions to the text, and the marked progress that has been made in dental surgery since the first edition of this work was published, and the care, accuracy, and ability, exercised in its production, we anticipate its becoming a valuable acquisition, not only to the professional dentist, but also to the medical profession at large.

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*Quantitative Chemical Analysis.* By T. E. THORPE, Ph.D.,  
Professor of Chemistry, Andersonian Institution, Glasgow.  
London: Longmans, Green, & Co. 1873. Small 8vo, pp.  
387.

THIS is certainly the cheapest manual—its price is only 4s. 6d.—of *Quantitative Chemical Analysis*, taking into account its completeness, which has ever come under our notice: it is also one of the best, which is a point more important than cheapness. It is really a very good manual, and contains a larger amount of information than one would expect to find in so small a volume—a fact due, to a great extent, to the concise, but yet clear, style of the literary portion of the work. The work gives excellent instruction relative to the various operations in connexion with quantitative analysis, but it is particularly serviceable on account of the large number of special processes for the analysis of commercial articles which it contains. In the department of mineral analysis the work is very complete; but we look for another volume from this author's pen, which would treat of the analysis of organic bodies, including poisons, such as, for example, milk, urine, oil cakes, indigo, sulphate of quinine, &c. Had the author included these matters in his work, it might thereby have been rendered too bulky, but we trust that he has such a work as that above suggested *in petto*. In these days, when public analysts are being appointed all over the country, the want of a quantitative analytical work, specially relating to the estima-

tion of the amounts of adulterants in foods and drugs, is urgently required. Such a work would meet with a large demand at the present time.

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*Foods.* By EDWARD SMITH, M.D., F.R.S., &c. London: Henry S. King & Co. 1873. 8vo, pp. 485.

IN its essential features this work resembles Dr. Letheby's "Lectures on Food," which we reviewed some time ago in this Journal. It gives the composition of all the more important foods, and discusses the subjects of their relative nutritive value. On these points the information given is very full and almost exhaustive. Some curious cookery receipts of the fourteenth century are given, and add not a little to the interest which every one, professional or lay, must feel in the perusal of this book. We think the section on ventilation might have been, with advantage, omitted. That subject is rather beyond the legitimate scope of a work on food. To discuss it in the present volume is to unnecessarily add to the bulk of the book, for if the readers want to study the principles of ventilation, they will not be satisfied with what they learn in Dr. Smith's work, and so must look into another for fuller information.

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#### WORKS ON HYGIENE.

1. *Manual for Medical Officers of Health.* By EDWARD SMITH, M.D., F.R.S. London: Knight & Co., Fleet-street. 1873. 8vo., pp. 346.

THIS book makes its appearance at a most opportune time, when, owing to the operations of the Public Health Act of 1872, medical officers of health are being appointed by the score throughout England and Wales. Many of these newly appointed sanitarians have had but little experience in matters relating to the public health, and to supply the wants of these officials, Dr. Smith's work is admirably adapted. Indeed, it is a volume in which even those who have made sanitary science a special science will find much to interest him. Dr. Smith's long official connexion with the English Poor Law authorities, and his special investigations

relative to food, ventilation, clothing, &c., entitle him to write *ex cathedra* on the subject of public hygiene.

2. *Handbook for Inspectors of Nuisances.* By EDWARD SMITH, M.D., F.R.S., &c. London: Knight & Co., Fleet-street. 1873. 8vo, pp. 296.

THIS is a valuable book for the class of public officers for whose special use it has been written: it is also a most useful work for the members of boards of guardians and other sanitary authorities who take an interest in the questions affecting public health. It contains *in extenso* all the more important Acts of Parliament relating to matters of public health, and it points out the proper manner in which the inspector should proceed in ascertaining the existence of nuisances, and in seeking remedies for them. As in England and Wales, the Public Health Act of August, 1872, renders it obligatory on the part of all local sanitary authorities to appoint inspectors of nuisances, Dr. Smith's book is likely to have a wide circulation amongst these useful functionaries.

We are not quite satisfied with Dr. Smith when he expresses a strong doubt as to the alleged unwholesome nature of the flesh of animals killed whilst in a parturient condition. When salmon and other fish are unclean and unwholesome, it is simply because they are then in the condition of viviparous animals in a parturient state. Animals, no doubt, as Dr. Smith states, rapidly recover after giving birth to their offspring, but they often die too. When cows or sheep are killed shortly after bringing forth their young, it is generally because their death from puerperal fever is imminent, and it is hardly possible that the flesh of an animal under such conditions is in every respect perfectly wholesome.

3. *The Relations of the Air to the House we live in, &c.* By Dr. MAX PETTENKOFER, Professor of Hygiene, Munich. Translated by AUGUSTUS HESS, M.D. London: Trubner, Ludgate-hill. 1873. 8vo., pp. 98.

A MOST interesting little book, to which reference was made in our Report on Public Health.

*Lectures on the Clinical Uses of Electricity.* By WALTER G. SMITH, M.D., Dublin; Fellow of the King and Queen's College of Physicians; Assistant Physician to the Adelaide Hospital. Dublin: Fannin & Co. London: Longmans, Green & Co. 1873. Small 8vo., pp. 51.

THESE Lectures were delivered in the Adelaide Hospital, in the winter sessions of 1871-'72, and 1872-'73; and full abstracts of them appeared subsequently in the *Irish Hospital Gazette* for the present year. Although in the first instance addressed to undergraduate students, and although the author modestly disclaims for them any "pretension beyond supplying an introduction to the more elaborate treatises published in our own and other languages," we believe that even the most experienced medical electricians will peruse these Lectures with profit and with pleasure.

They are four in number: in the first and second the three primary forms of electrical force are considered, the various electro-medical apparatuses in use are described, and the general effects of electricity on the human body are arranged and treated of under the heads—*physical*, *chemical*, and *physiological*. Lecture III. is devoted to the consideration of the last and most important of these heads—viz., the physiological or vital effects of electricity, as exhibited in (a) the circulation; (b) the muscular system; (c) the nervous system; and (d) on general nutrition. Lecture IV. is essentially practical, for the subject matter of it is the therapeutic application of galvanization and of faradization—or, to use more strictly scientific terms, of the direct and induced currents respectively. The reader arises from the perusal of this, and, indeed, of all the Lectures, with that indefinable feeling of satisfaction which is based on the firm conviction that his author *knows what he is talking about*. We are able earnestly and honestly to recommend this little work on a very important division of therapeutical science to every branch of the profession—medical, surgical, and undergraduate.

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*Traité Pratique des Maladies des Femmes.* Par FLEETWOOD CHURCHILL, M.D., &c. Traduit de l'Anglais. Par Messieurs les Docteurs WIELAND et DUBRISAY. Deuxième édition, revue et corrigée. Par Dr. A. LE BLOND. J. J. Baillière et Fils.

THIS volume is the second edition of a work not altogether unknown to our readers. As that work was fully reviewed in our

pages many years ago, and notices have been given of successive editions, it would be out of place to enter into details now.

We have examined the volume and think the translation very creditable. The translators have added whatever in French literature they found had been omitted, and thereby have increased the value of the work. We have no doubt that, in any future editions, the author will gladly avail himself of the labours of his translators.

There is one practical point, however, which it may be well to notice. From some of the plates it appears that the patient is placed on her back for examination of the womb with the speculum, and in some of the minor operations. This we believe to be the practice in France, but it certainly is not in Dublin. With occasional exceptions, the patient is placed on her left side, with the knees drawn up. This is found to be quite as convenient, and—to us, at least—it seems more delicate.

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*Du Traitement des Plaies en general et en particulier d'un Mode Nouveau par le Coal-tar et le Charbon.* Par LOUIS BEAU (de Toulon), Médecin en Chef de la Marine; Professeur de Clinique et de Pathologie Chirurgicale, à l'Ecole de Médecine Navale de Toulon.

IN the small work now before us we do not find, nor does M. Beau profess to give us, any great novelty in the mode of treating wounds, the object of the work being rather to point out certain details in the mode of application which M. Beau considers as necessary to its success.

The work is divided into three sections. In the first he dwells on the theory of septicity of wounds, and then passes in review the various methods which have from time to time been adopted to ward it off, dividing them into the methods by occlusion, and those by disinfectants. In the second section we find what may be considered as being the pith of the work, *i.e.*, a description of M. Beau's method of treating wounds. He considers that his preparation of coal-tar answers all the requirements of a dressing, being an antiseptic, an emollient, and an anti-inflammatory agent. His mode of treating wounds, whether fresh or in a suppurating condition, is as follows:—1st. Bathe the whole surface freely with pure alcohol. 2nd. Dress with the coal-tar. The simplest method

of applying the coal-tar is to form a powder of four parts of wood charcoal and one part of coal-tar, as recommended by M. Herpin (de Metz). This powder is shaken in a box with charpie, so that the latter is entirely penetrated by the antiseptic. The dressing is then applied in layers, and allowed to remain till the discharges have entirely penetrated it. M. Beau then enters on a description of the treatment of ulcers, &c., but in all the principle is identical. It will, therefore, be seen that, as we have above stated, the work cannot be said to afford us any great novelty in antiseptic surgery.

The third division of the work occupies but a few pages, and is devoted to an account of certain observations made during an epidemic of hospital gangrene which fell under the author's notice. In it he describes his views of treatment, both preventive and curative.

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*The Microscopic Structure and Mode of Formation of Urinary Calculi.* By H. VANDYKE CARTER, M.D., (London). With illustrations. London: J. & A. CHURCHILL. 1873. 8vo., pp. 51.

To Dr. Carter belongs the (in these days) rather uncommon distinction of having mapped out for himself a novel path of research in the domain of scientific medicine. So far as the author is aware—and we believe he is correct—no systematic inquiry into the subject of the present monograph has been recorded hitherto. As he fitly expresses it in his Preface, “a blank existed in medical literature which he might do something to fill up.” How ably and how well this end has been achieved we hope to show in the sequel.

The work consists of two parts—the first treats of the *minute structure of calculi*, the second deals with the interesting question of the *mode of their formation*. Dr. Carter's researches—commenced some three or four years ago, “at a small station in the Deccan plain of Western India” (even in that torrid clime good substantial work can be done)—embrace microscopic (aided by chemical) experiments upon eighty specimens of urinary calculi. Of these five, or six per cent., were removed from the female bladder; thirteen, or fifteen per cent., were urethral, or more rarely renal calculi from males; while sixty-two, or seventy-nine per cent., were vesical calculi from male subjects, varying in age from two-and-a-half to sixty years—about *one-half* of this class of patients being under ten years,



and only nine over forty. Among the sixty-two vesical calculi, the nucleus was composed of urates in thirty-four, of uric acid in seven, and of oxalate of lime in twenty-one instances. The structural elements of the calculi are concisely given in a very clear table—suffice it to say here that the inorganic elements were observed under the forms of granules, globules or spheroids, glomerules, crystals, and laminæ.

As the results of his investigations, Dr. Carter found: (1.) That the opinion that urinary calculi took their origin merely from the precipitation or aggregation of ordinary crystalline and amorphous deposits, held together by mucus and so on, was quite untenable; (2.) That an animal basis was present as an essential component of such calculi; (3.) That the more characteristic constituents of calculi—such as urates, uric acid, oxalate, and phosphate of lime—were present in unusual forms, not recognizable in ordinary urinary deposits, and apparently due to the *molecular coalescence* of inorganic bodies by means of an organic medium. Such forms the author would call "*sub-morphous*," as distinguished from "*amorphous*." As examples, we may instance laminæ of urates, spheroids or globules of oxalate of lime, and a peculiar crystalline form of the last-named salt. A fourth conclusion, at which Dr. Carter arrived, was that an accumulation of this sub-morphous or globular form of urates became frequently the starting-point of a stone. So far Part I.

In the second portion of his monograph, Dr. Carter affords strong evidence of his ability to apply the knowledge he had acquired by observation and experiment to the investigation of the microscopical structure of calculi. The subject matter of Part II. is withal so important and is so admirably dealt with by our author, that we crave the indulgence of our readers while we enter into it in some detail. In doing so it will be necessary to be a little retrospective. In a work "*On the Formation of Shells*," published fifteen years ago, Mr. George Rainey described a process to which he gave the name of "*molecular coalescence*;" much more recently Dr. W. M. Ord continued and developed Mr. Rainey's researches in a series of experiments on the influence of colloids upon the forms of inorganic matter. The results went to show that in the presence of certain colloid substances, inorganic bodies tended to combine under forms different from those assumed by the same bodies in the absence of such substances. In illustration we give an example of the process in Dr. Carter's own words (page 34):—

“When two saline solutions, which are calculated to produce, by double decomposition, an insoluble carbonate of lime, are allowed to gradually and slowly intermix through the intervention of a viscous medium (such as dissolved gum or albumen), there are formed, by the union of nascent salt with colloid, not crystals of the carbonate, but small, firm, rounded bodies, which are possessed of a concentric and radiate structure; and which, while disposed to adhere to any surface already existing (of itself capable of modifying their shape), commonly remain free as formed, but also exhibit a tendency to meet and blend together so as to lead to the construction of a laminar series.”

In a word, these sub-morphous bodies, which Dr. Ord obtained by experiment, find their exact counterpart in the sub-morphous forms of urates, oxalate of lime, &c., observed in calculi by Dr. Carter. Here we have the starting-point of a novel, and, we may add, fascinating theory of the formation of urinary calculi—one at once in accord with the demands of physiology and based upon Mr. Rainey's process of molecular coalescence, the existence of which there is no reason to doubt. We shall, once more, let Dr. Carter speak for himself:—

“It seems to me that the necessary conditions, for the operation of molecular coalescence, may at times well occur in the living human subject; thus, an excess of mucus, perhaps altered in character, in the urinary passages, or the effusion of albumen, fibrine, or blood, and the like—say from congestion of the kidneys, or from irritation of the urinary tract—would furnish a colloid medium\* with which uric acid, the urates, or oxalates, themselves perhaps in excess, could combine in the manner before described; did there happen, also, an undue concentration or special loading of the urine, and the probabilities are strengthened that to (from ?) some illness—fevers of various kinds, ague, or an attack of cholera, renal congestion or inflammation—is correctly to be dated the commencement of a calculus. It must also be assumed that the continued growth of a stone is dependent upon the presence of organic matter, and this at every stage.”

The concluding suggestions of the monograph are eminently practical. The importance of the frequent presence of a deposit of urates, or of oxalate of lime, is greatly increased if we know that the additional presence of a little albumen, or mucin, or blood, may induce molecular coalescence, and so cause the forma-

\* See Rindfleisch, *Path. Histology*. New Syd. Soc. Vol. ii., p. 143.

tion of a stone. Of the dispersion of calculi the author has but little to say, except that he regards the utility of the measures generally taken to secure this end as much more than doubtful; but he believes that a great deal may be done in the way of preventing the formation of calculi.

Dr. Carter's work concludes with four carefully executed plates, which are fully explained in the accompanying letter-press. After the remarks we have already made, we need scarcely add that, in our opinion, this book should be in the hands of every practical physician, physiologist, and pathologist. Some minor alterations for the better will, we trust, be made in a second edition; for example, uniformity is needed in the designation of oxalate of lime. At one place we read of "calcic oxalate," at another of "calcium oxalate," and, at a third, of "oxalate of lime." Such inconsistencies will not, however, mar the usefulness and the merit of the book.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

*Wednesday, November 19th, 1873.*

JAMES F. DUNCAN, M.D., President, in the Chair.

The PRESIDENT read the following Inaugural Address :—

GENTLEMEN—The high honour which has been conferred on me by the College of Physicians by electing me their President for the current year, invests me, according to the Constitution of your Society, with the privilege of presiding over your meetings during the continuance of my office. It is a source of gratification and of pride to me to remember that when the meetings of this Society were held for the first time within the precincts of the College, now some three-and-twenty years ago, I was privileged to take an active part in the negotiations which led to this result, and that it was, in fact, a suggestion of my own which formed the basis of the arrangement which has worked so well for the credit of the College and for the interests of this Society. It is true that since then I have not been required to take an active part either in the management of your affairs or in the conduct of your proceedings. Other labourers have been found in abundance to do all that was necessary in these respects, but I have never ceased to take a deep interest in everything that affected either the usefulness or character of your Association. Without making any invidious comparison with the other Medical Societies in this city, I think it will be admitted that while this one bears the palm of age among them all, it is as young and as vigorous as any, and that its proceedings within the last few years may fairly be placed beside the best efforts of its earliest days.

Gentlemen, it is scarcely necessary for me to tell you that the Association of Fellows and Licentiates of the King and Queen's College of Physicians was originally established for the double purpose of promoting a kindly feeling among the members of the medical profession, and of

cultivating in common all those branches of study which are subservient to the practice of the healing art. Both of these objects must commend themselves to the common sense of every reflecting mind, and need no argument of mine to secure your approval. To what, may I ask, are we to attribute the gigantic strides that scientific inquiry has made in every department in recent times, as compared with its slower growth in former ages, but to the more general adoption of the principles of associated effort by persons interested in the same studies and engaged in the same pursuits? The multiplication of societies in every direction devoted to special topics from such huge gatherings as the British Association for the Promotion of Science, and others of a similar kind that traverse the kingdom when holding their yearly assemblies, down to the most obscure local clubs, are so many proofs of the power and usefulness of co-operation in the accomplishment of a common object, and of the desirableness of occasional personal intercourse in preventing misunderstandings, and promoting mutual respect and good feeling among the parties engaged in such pursuits.

This Society not only gives its members an opportunity of placing upon record any new facts or ideas that suggest themselves to their attention in the course of their practice, but supplies them with a stimulus to follow up trains of thought that may lead to important results in the end. Many a man meets with a solitary case presenting sufficiently remarkable features to be made the subject of a communication to a Society like ours, who would never think of sitting down to write an elaborate article for a journal upon it, or even to send it, in its nakedness, to a weekly periodical, yet the case itself may throw an important light upon others occurring at the same time, as seen by other members of the Society; and so what may be the merest trifle in one aspect, may become the germ of a valuable discovery in another. I make the remark, in passing, in the hope that it may lead us all, young and old, to break through the silence, which is apt to become conventional wherever the false notion is allowed to prevail that only clever papers are expected to be read, and that no one who has not some novelty to communicate should obtrude himself on the attention of the meeting. On the contrary, even ordinary facts, which merely confirm well-known theories, or establish the efficiency of established modes of practice, become valuable when properly reported, from the testimony they bear to the correctness of the ideas prevailing on the subject. I have only to appeal to the way in which papers have been hitherto received in this room, to assure every one who will favour us with contributions for our re-union, that they will here meet with a kind and friendly reception.

Independently, however, of the value of our Society in a scientific point of view, its social advantages are of sufficient importance to justify its continued existence. Unfortunately for ourselves there is no class of

**men** who are more liable to be thrown into unpleasant relations with each other, through the unwarrantable interference of outsiders, than we are. **The** conduct we pursue in the treatment of our patients is continually scanned and criticised behind our backs, and often mistatements are made regarding us which we have no means of discovering or correcting until long after the mischief has been done. When a man, from any cause, is brought into our courts of law, his neighbours do not usually trouble themselves with the inquiry whether the lawyer he consults knows his business or not, or is right in the course he adopts for the interests of his clients—at least if they do, it neither occurs so often, or takes the active form it often does when we are concerned. With us, when a patient is long ill, or his malady proves rebellious to treatment, plenty of friends are found to come forward with suggestions that a new doctor should be called in, a different line of treatment adopted, or something of one kind or another resorted to, which shows a want of confidence in the medical man in attendance. What makes the matter worse is, that owing to the course adopted by partizans of this kind, a colour is given to the idea that a rival practitioner is at the bottom of the proceedings, and that the friends ostensibly making the suggestions are but the agents of the person named who is anxious to do us an injury. It is difficult to see, under these circumstances, how constantly we are exposed to agencies calculated to produce distrust and ill-will between us? That bickerings and personal quarrels do not more frequently result is due to the good sense and honourable conduct that to so large an extent characterize the members of our body. I think it is a matter of just pride and satisfaction to us all to know that nowhere does a better feeling exist among the various branches of the profession than in this city, and everything which contributes, in ever so small a way, to produce this result is worthy of our confidence and support.

Gentlemen, notwithstanding the rapid and manifest progress that has been made of late in every thing connected with the practice of medicine, in physiology, pathology, histology, pharmaceutic chemistry, physical diagnosis, &c.—there are still a large number of persons, even in the higher and more cultivated walks of life, who are ready to depreciate our profession as uncertain in its foundations and unworthy to be considered a branch of practical science. They look upon our theories as baseless hypotheses—the fashion of the hour—perpetually changing with every new speculator who has sufficient boldness and originality to venture into the field. The diagnosis of disease they regard as successful guessing, even when verified by results; and as to treatment, it seems doubtful in their eyes whether the patient, on the whole, would not do just as well without the doctor as with him. There is a natural tendency, they say, in the human system to get well of itself, if it be left alone and not interfered with; and they maintain that when a patient recovers, it is nature

that effects the cure, and not, in any respect, the artificial means employed upon the occasion.

The differences prevailing among medical men, both with regard to the general principles of medicine; and still more as to the views to be taken of particular cases when they meet in consultation, are the grounds upon which they base their opinions. They cannot understand how such a thing could happen if the elements of science were really clear and well settled. We all know that the frequency of the occurrence has been stereotyped into a reproachful proverb. But the answer to the objection is simply this: the difficulty of determining the truth in any particular instance, lies quite as much in the differences, natural or acquired, of the perceptive powers of the parties making the investigation, as in the obscurity of the subject to be enquired into. There are—there necessarily must be—the greatest possible variety in the intellectual capacity of different medical men, arising from natural taste, mental endowment, education, opportunities of observation, experience, &c. Can it be a matter of surprise if two men, differently constituted in these respects, examining an obscure form of disease, should arrive at conclusions totally dissimilar as to its nature and mode of treatment. If the practice of the healing art could by any possibility be limited to men possessing, in a high degree, all the natural qualities of mind and body requisite for the purpose; and if none even of these were permitted to enter on the responsible duties of the profession until after a sufficiently high standard of education to ensure a proper personal training, the differences we speak of would either cease to exist, or they would become so rare as to cease to be a reproach. Every one admits the claim of Astronomy to be regarded as an exact science. Let us suppose that the graduates of our University who are obliged to learn something of the subject theoretically, were required, in addition, to spend a certain definite time in the Observatory, practically working out the calculations connected with the various problems investigated there; and let us suppose that then, after a suitable and not very searching examination, in a number somewhat corresponding to that of our medical graduates, they were sent forth into the world as acknowledged and authorized astronomers, would it be at all surprising if, under the circumstances supposed—where so many persons of such various degrees of intellect, mental endowment, and natural attainments were engaged—great diversities of opinion should afterwards be found existing as to particular points connected with their profession, and that when they came to work out practically the results of their observations, few or none of them should be found absolutely to agree? Would not the wonder rather be if an opposite state of things were to occur? The exactitude of the science in that case would have had nothing to say to the results, but the imperfect qualifications of the parties making the observations, and the greater or less aptitude they displayed for the right

cultivation of the pursuit they were engaged in. But, even under the conditions supposed, two things will be readily granted as likely to occur: the first, that the more highly gifted and better educated members of the astronomical body would exhibit less difference in their opinions and calculations than those who occupied a lower place in the scale of their attainments.

The second point is—and it is the more important for our present purpose—that these differences of observation and inference would be found to affect principally questions of the higher order of science, involving intricate and perplexing calculations, rather than those of more frequent occurrence and of an ordinary character. The calculation that led Mr. Adams—at that time an under-graduate in Cambridge—to suspect the existence of an unknown and undiscovered planet beyond the previously acknowledged limits of the solar system, and to determine its magnitude and position in the precise spot where Le Verrier afterwards detected it, was a marvel of ingenious reasoning and deduction, but the problem itself was evidently not of every-day occurrence. The case is different with the occultations of the fixed stars, the transits of Venus, the determination of eclipses, &c., habit and previous experience, render the task easier, and, therefore, the liability to error and mistake infinitely less.

Something similar, I conceive, may be said in reference to the practice of medicine. There are undoubtedly forms of disease so occult in their nature, so obscure in their symptoms, and so little amenable to treatment as to bid defiance to the ingenuity of the most accomplished among us. But in comparison of the great bulk of cases that come before us, these may be considered rare and exceptional instances. The ordinary ailments that form the staple of our daily toil are the very reverse of all this. They are thoroughly well-known. We are familiar with their appearance, origin, progress, and mode of treatment; and if a necessity arises for a consultation in the course of a case of this kind, there either is no difference of opinion manifested between the practitioners, or it is so trifling in its nature as to be of no practical importance.

Gentlemen, I have alluded to the right which our profession has to be considered a science, as contra-distinguished from an art. Allow me to make an observation or two on this point. An art, as I understand it, is a pursuit more or less of a mechanical character, which is regulated by fixed rules, these rules themselves being often capricious in their nature, and having nothing to determine their fitness but the arbitrary authority that regulates their proceedings. Now, the practice of medicine when rightly understood, and when pursued in a proper spirit, is the very opposite of all this. It is based upon the perpetual exercise of the reasoning powers brought directly to bear upon the individual instance before us, and because of the ever-varying nature of the symptoms of



disease and the diversities of the human constitution, whenever this principle is lost sight of, whenever the practitioner, leaving out of view the personal peculiarities of his patient, proceeds to treat him in a blind routine manner—that moment he abnegates his high function, and proclaims that he is no longer fit to be trusted with the solemn responsibilities he has undertaken. The necessity for this constant reference to the laws of life and to the varying intensity of the nervous force it is that constitutes the claim of the profession to be considered a branch of practical science. The physician, like the astronomer, is called upon to study the nature and properties of hidden forces perpetually in action in the world around him, the effects of which he is able to trace and calculate, but the forces themselves elude his observation; he can neither isolate, nor analyze, nor produce them. The one deals with life, nervous energy in its various forms, with epidemic influences; the other with gravitation and electricity. But there is this great difference between them—the potential energy of gravitation, which is the principal element in the astronomer's calculation, is fixed and uniform; while all the forces with which physicians have to deal exhibit changes in their duration and intensity that, as yet, we are unable to explain or anticipate. Whether we shall ever be in a better position as to this point than we are at present is a question upon which it is vain to form a conjecture. Whether there shall ever arise a medical philosopher like Sir Isaac Newton, who, grasping one solitary fact, shall be able to unravel the tangled thread of seeming contradictions, and evolve a simple, clear, and easy law for the solution of all our difficulties, it is impossible to say; but it appears to me that if ever such a happy issue is to be brought about, it will be by the foundations for that discovery having been first laid in a wide and long-continued train of observations touching this very point, the variations in the intensity and direction of the several subtle forces acting on the human constitution, and as a necessary preliminary to that I think the fact itself must be more generally admitted than it is, in order that attention may be the better directed to its elucidation and establishment.

Let me explain my meaning by one or two familiar illustrations. The vital force, as you are all aware, differs in intensity in different individuals, according to the robustness of their health and the vigour of their constitution. One is weak and puny, incapable of much exertion, easily fatigued, and prone to suffer from attacks of illness on slight exposure to its ordinary producing causes; another person will be the very reverse of all this; he will be strong and vigorous, active, able to go through a great deal of work without suffering, and remarkable for his power of resisting the inroads of disease, though exposed to its influence. This difference in the character and condition of the two individuals is inherent, and is unaffected by external agencies. It

depends upon the organization of the textures of their respective bodies, and can only be altered by changes acting slowly upon the nutrition of the parts. I need scarcely say that the physician, when called upon to prescribe for patients, makes due allowance for these differences in the doses of the medicines he prescribes, and in the more or less heroic manner in which he treats their ailments.

But there are other differences to be observed affecting the same individual at different times, which indicate variations of intensity in the vital forces depending altogether on extraneous influences, and which cannot properly be set down as due to changes in the organization, for this simple reason, that they are observed to appear and disappear in intervals of time too short to allow of such organic changes being produced. Every one feels the debilitating effects of a close and sultry day, when the atmosphere is heavy and the air oppressive; and, on the contrary, we all experience a buoyancy of spirits and a lightness of step when the weather is cold and bracing; and if this is true as regards the strong, the healthy, and the robust, it is still more obvious in persons who are delicate, and in those who are infirm or affected with chronic ailments. The variations in the humidity or dryness of the atmosphere, in its electrical state, its temperature and barometric pressure, tell with painful intensity upon multitudes of sufferers who never leave the house, or even their bed-rooms. These changes do not affect the individual merely—they have a common action over the whole community, and must evidently influence the nervous force, impairing its energy, and rendering it unusually sensitive to morbid impressions.

It is scarcely necessary for me to point out to you that all these influences are capable of being measured with very considerable precision, and of being registered from time to time for the purposes of future calculation and study; in fact, this is actually done very extensively by all those who devote themselves to meteorological pursuits. But there are other forces at work influencing the health of the community in a similar manner, of which we at present know nothing, and whose existence and power are only a matter of inference from facts which are too obvious to be disputed, and which admit of no other explanation. One of these is what is described under the name of epidemic influence. This is not any special force tending to produce one particular disease whenever it prevails, nor yet a special force tending to aggravate the intensity of all diseases equally and simultaneously in the way ordinary atmospheric changes may be supposed to do, but a tendency to produce one particular disease in unwonted frequency at one time, and some other form of disease in the same unwonted frequency at another. Thus it may be small-pox this season, scarlet fever the next, cholera or typhus the year after. Sydenham, as doubtless you all remember, has called particular attention to these

varying phases of epidemic influence, and has pointed out, with special emphasis, the fact that, in the course of a single season, he has seen the type of fever undergo several unaccountable changes which he could attribute to nothing but corresponding changes in what he called the atmospheric constitution of the period, and which required him, as soon as they were discovered, to alter his mode of treatment in order to secure success.

We have many proofs of the actual existence of this morbid influence. We have, in the first place, the fact that infectious diseases will spread with greater facility among a given population at one time than at another, and this when the attending conditions of the two periods are as far as possible similar. Then, in the next place, we have the fact that at such times one species of zymotic disease will prevail to the almost total exclusion of the rest. Then, in the third place, we find that when a particular disease is epidemic, the propagation of which is usually observed to depend upon inter-communication between the sick and the healthy, numerous cases are known to occur in which no such connexion can possibly be traced. In these instances it is supposed that the morbid germs, being present in unusual quantity in the surrounding air, are carried into the lungs of the healthy, and produce their effects without any direct contact between the individuals. Another fact, tending to establish the same result, is that when any of the severer forms of illness are prevailing epidemically, a very large number of persons, who do not show symptoms of the disease in its developed and normal form, suffer at the same time in a way that may be considered to show that they are not altogether exempt from the influence of the prevailing malady. Thus we have diarrhoea and cholera largely abounding when the veritable cholera is in the district; inflammatory sore throats when scarlatina prevails; and so on.

Another fact worth noticing is that diseases often exhibit peculiarities, when prevailing epidemically, that they do not usually present at other times. Thus the last epidemic of small-pox was remarkable for its purpuric varieties, and for its complications with cerebro-spinal arachnitis—features never met with in its ordinary form, and rare even when epidemic. Another remarkable feature of these epidemic diseases is their occasional virulence—not their fatality merely, but their producing, almost instantaneously from the moment of attack, such a depression of the vital force as to defy the ordinary powers of medicine, and to terminate life with great rapidity. I well remember the widespread and fearful panic that prevailed on the primary invasion of Asiatic cholera in this country about forty years ago. Almost every case at first proved fatal; the seizure was sudden, the collapse rapid, and without any attempt at rally—a few hours only elapsing between the period of perfect health and the fatal termination. But this was only at

**first**; as the epidemic went on it lost much of its original violence; **gradually** a few cases began to recover; they lasted longer; the collapse **was** not so sudden or so severe; remedies seemed to have more power; **the** whole condition of society began to improve. Men thought at the **time** that the cause of the little success that attended the earlier efforts **of** the medical men in attendance was their want of practical experience **in** the management of the malady. It was a new disease; they had had **no** opportunity of studying its peculiarities and its proper treatment; but **as** they grew more familiar with its symptoms and appearance, they **were** better able to combat its progress, and hence more successful in the **results** obtained. Had this been really the case, we should not have **witnessed** a recurrence of the same series of events on the second invasion **of** the disease a few months after the termination of the first. Yet so it **was**. We had a second time, when our previous experience, if of any **value** to mitigate the severity of the plague, ought to have enabled us to **have** a different story to tell, the same almost absolute mortality at first **as** before, gradually diminishing in amount, until again, near the close of the epidemic, the recoveries were nearly as numerous as the deaths at the beginning. I mention these facts to show the absurd notions that men are apt to take in reference to our profession from partial and imperfect acquaintance with the subject. In neither instance was it ignorance or want of skill that led to the fearful loss of life, but the intensity of that peculiar influence, whatever its nature may be, that acted on the human system in a way to destroy its power of resistance beyond the hope of recovery.

It is not necessary for me to pursue this part of my subject farther, although everything connected with epidemic influence is interesting and instructive; it is enough for my present purpose, to call your attention to what you must all be familiar with, that there are these special influences acting from time to time in the world, and producing effects which we can observe and study, though we are ignorant of their nature and their causes. They come and go, we know not how or why—they are limited in the extent of territory attacked, as well as in the period of their continuance. They decline in one district while they are commencing in another, and are everywhere marked by infinite diversities both of character and results. Now, the point I wish to arrive at is this—that if all this is true; if there are these occult forces in constant operation in nature, exercising a special influence upon men and the maladies which affect them; can it be unreasonable to suppose that there may be other forces of a different kind equally obscure or unknown, acting more slowly or imperceptibly, but not the less really, over the human race, not confining their effects to special districts of the earth, or to limited periods of short duration, but extending to the whole family of man, and producing their changes at longer intervals of time, and lasting for many years

without perceptible alteration. Gentlemen, there seems to me good reason to believe that disease, in the course of a long series of years, runs through a cycle of change, beginning at one end of the scale with a decidedly sthenic character, passing from thence by slow and imperceptible changes till it reaches the lowest point of asthenia, and then, by an equally slow and steady step, returning to the condition from which it originally started. As I have stated, there appears nothing unreasonable *à priori* in a belief that such a thing may occur, though we may not be in a position either to explain or account for it. The history of medicine justifies the idea, and vindicates the past history of the profession from the charge of inconsistency and vacillation in their principles and modes of treatment. I know there are many persons in the present day who doubt, and others who deny, that there has been any change in the nature of disease within the last forty or fifty years; yet I cannot shut my eyes to the impression made upon my own mind by what I myself saw when commencing the profession as a student. It was my fortune to witness the prevailing mode of treatment when the antiphlogistic method was still extensively in use—when bleeding, leeching, blistering, calomel, and tartar emetic to an heroic extent were daily employed. The late Dr. John Crampton, whose clinical clerk I was for nearly two years in the hospitals of the House of Industry, though eminently eclectic in his principles of treatment, was no timid practitioner whenever he considered the use of the lancet necessary or expedient. It was no uncommon thing for him to order a bleeding to the extent of sixteen or twenty ounces in the morning, with directions to have it repeated at night or next day should relief not be obtained. Seldom a day passed without our having to perform venesection once or twice. With him it was the usual practice to bleed cases of scarlatina from eight to sixteen ounces, according to the intensity of the fever, and the cases all did well. There were none of the internal complications so commonly met with ever afterwards seen, and the only cases of albuminous anasarca that I recollect meeting with were either cases which had not originally come under his treatment, or in which the mildness of the disease prevented the use of the lancet. So vividly was the benefit of this treatment impressed upon my mind, that when I heard of cases of scarlet fever terminating fatally in the hands of other practitioners, I fully believed that the sad result was due to the timid or improper line of treatment adopted. I changed my mind, however, a few years after, when for the first time I met with a case of true asthenic, or typhoid, scarlatina.

He was further in the habit of using calomel very freely in the treatment of all forms of acute inflammation, giving two grains every third hour, in combination with opium or other appropriate remedies, in a manner which would now-a-days be thought unnecessary or dangerous. Yet, my firm conviction is that this heroic treatment was not only borne

**without** injury, but was plainly and unmistakably of use. The recoveries, **according** to my recollection, were as numerous, as rapid, and attended **with** as little after-inconvenience as any that are now met with. But **while** I say this, I am equally convinced that were the same measures to **be** adopted in the present day we should have a very different tale to **tell**. We do not, I think, meet with the same class of cases that were **then** of every-day occurrence. Pure pneumonias, attended with high fever, flushed face, distress of breathing, hard pulse, burning heat of **skin**, so far as my observation goes, are not nearly so common as they **used** to be, and the same may be said of other forms of acute inflammation, and if we were to bleed in most of the cases that come across our **path**, even to a moderate extent, we should find a degree of depression following that would render us slow in repeating the experiment. I **know** it is very hard to persuade persons whose observation does not **date** sufficiently far back to believe in a statement of this kind. They **judge** of disease and of the action of remedies by what comes under their immediate notice, and they cannot bring themselves to conceive that the state of things they hear of should have been ever different from what it **is**. To them, as to the unprofessional public, the change in the practice of medicine appears altogether to be the result of progress in scientific knowledge, the better education of the members of the profession, or a more thorough acquaintance with the principles lying at the foundation of successful practice. Many persons believe that the improvement is entirely due to the introduction of homœopathy; I do not think so. Without stopping to discuss whether that system of medicine so called may not have had some influence in accelerating the result, I firmly believe that the alteration referred to would have come, and been as extensively resorted to, if it had never appeared. To discuss the subject fully would require longer time than is at our disposal. Let me briefly give you a few reasons. I have already mentioned that the human system is not so tolerant of depressing remedies as it used to be. If a patient is bled now-a-days syncope is induced much sooner and on a smaller loss of blood, and the blood does not usually exhibit, even in inflammatory affections, the thick buffy coat and the contracted cup-like surface that was almost universal before. Tartar emetic cannot be taken even in small doses without nausea intervening, and the tolerance of the drug once so common is now never met with. On the other hand, quinine is not only more frequently used, but in much larger doses than before, and that too in a class of diseases where it was considered to be entirely out of place. I allude to pulmonary affections.

Then, again, the diseases met with are altogether different in type from what they once were. The various forms of acute inflammation are less pronounced in the intensity of their symptoms than they used to be. I believe it to be a fact, though it does not come within the range

of my own personal observation, that the old well-known Hunterian chancre is now rarely met with, and, to refer to another department of practical medicine with which I happen to be more conversant, acute mania, with its great nervous excitement, exalted functions, and wild delirium, has become comparatively rare, while the other forms of insanity, melancholia, and morbid delusions of various kinds, exhibiting depression of the vital force, are met with in increasing numbers. In going through any large lunatic asylum where numbers of cases of acute mania used to be constantly found, you will now, in all probability, scarcely meet with an example. It is a curious thing, and one that struck every one present at the time with surprise, that at the last meeting of the British Medical Association, in London, a paper was read, in the Psychological Section, under the heading—"Is there such a Disease as Acute Primary Mania?" The writer of the paper, who was formerly superintendent of one of the large county asylums in England, and is now proprietor of an extensive establishment in the neighbourhood of Bristol, and a man very highly thought of in the specialty, contended that what was generally regarded in this light was only the initiatory stage of that particular form of alienation known as "General Paralysis of the Insane." The meeting did not appear, generally, to concur in his view, but, in my mind, the simple explanation of the opinion is the increasing rarity of what was once a well-known and universally admitted condition. According to my observation, cases of this kind do occur sufficiently often to make us familiar with their symptoms and progress, and to prove that they have no tendency to degenerate with paresis, as he contends, but not at all as often as they used to do some thirty or forty years back.

The same idea of the depressed condition of the system, evidenced in the prevailing forms of insanity, is established by the change that has taken place of late years in the treatment of these affections, corresponding with the change of treatment prevailing in general medicine. All remedies of a lowering tendency, if not entirely laid aside, are used less frequently than formerly. Shaving and blistering the head, active purgatives, cold shower baths, tartar emetic, &c., have disappeared from ordinary use, while everything is done to support and nourish the system, by good diet, tonics, and narcotics to induce sleep.

For these reasons, then, I hold that there has been a change in the type of disease within the last forty or fifty years; that this change has been the cause of the admitted change in the treatment, and that the profession is not justly chargeable with acting unreasonably in what they have done, but that they have followed, as they were bound to do, the indications that observation and experience showed to be necessary.

And, then, as to that other statement that the recovery of the patient is to be attributed rather to the healthy action of the constitution than to the efforts of the physician, I beg to say, that while fully admitting the

important part played by the *vis medicatrix nature* in bringing about so desirable a result, I must emphatically deny that the well-directed efforts of a skilful practitioner are ever out of place in the treatment of a serious case of illness. That the slighter forms of many diseases can, and often do, get well of themselves, is a point not to be denied. It is the very condition of a living body to resist impressions from without in consequence of its innate energy, just as it is the province of the healthy will to assert its right of independent volition, in opposition to the constraints of other men's wills forced upon it. But it may be a question whether, even in these cases, the timely aid of medicine judiciously applied would not render the recovery speedier and more satisfactory. But whether it is so or not, one thing is clear, that in the vast majority of cases of serious illness the aid of the physician is required to bring the patient safely through the trying ordeal. Many cases would never recover if left entirely to the efforts of nature, and many others would recover only after a long and protracted struggle. Whatever shortens the duration of an attack, whatever husband the patient's strength, whatever renders convalescence easier and more perfect, must have a beneficial effect on the constitution of the sufferer, and render all his future life happier and more robust.

Shortly after I commenced practice, a gentleman, rather past the middle age, was attacked with a severe hæmoptœ, in his office, in Abbey-street. He was a patient of Dr. Denham, and when he was sent for to see him, the doctor was not at home. I lived then on the opposite side of the street, and the messenger was sent on to me. When I arrived I found several friends in anxious attendance, administering various domestic remedies to check the bleeding, but all to no effect. Having satisfied myself that the case was one of congestion of the lungs, and that the pulse would bear depletion, I proceeded to bleed the patient, much to the surprise and alarm of the bystanders that one so young should venture on so heroic a remedy. Nor was their horror lessened at finding that I persevered in the course I had adopted until I had taken 18 or 20 ounces of blood, and made a decided impression on the system. But what was the effect? The hæmoptysis was arrested; no unpleasant results followed; and in two days the gentleman was convalescent. Well, it so happened that a year or two after he had another attack. Dr. Denham was out of town, and Sir P. Crampton was sent for in his place. Whether it was that the symptoms were less urgent, or that Sir P. Crampton felt timid, I do not know, but I heard from Dr. Denham that he was not bled on that occasion, that he remained seriously ill for a week or ten days, and that his recovery in the end was slow and unsatisfactory. Can there be a question that the heroic treatment in the first instance was the cause of his speedier recovery on that occasion, or that it was more advantageous



to him on the whole than the more cautious but slower treatment afterwards adopted.

But it is idle to argue this question. The common sense of the mass of mankind has settled it everywhere and in all ages. When men are suffering they will send for help, no matter what their ideas at other times may be, and when they derive relief from pain they will acknowledge the potency of the drug employed, and the skilfulness of the physician who administers it.

Gentlemen, this address would be incomplete if it did not contain some allusion to the heavy loss which the Dublin School of Medicine has recently sustained, by the almost simultaneous removal of three of our most distinguished teachers. Two of these, Professors Barker and Smith, have been taken away by death, if not in the prime of life, at least, in all the vigour of intellectual activity and usefulness. A few weeks ago they were both, to all appearance, in the full enjoyment of health and strength, and one of them had been just rewarded with the too tardy honours of the sister corporation, which the jealousy of former times had unfortunately denied him. But no honour, however high or however gracefully conferred, could add fresh lustre to that unrivalled reputation which the genius, the industry, and the indefatigable perseverance of Robert W. Smith, had earned for himself. Professor Law, the third in this galaxy of eminence, still lives, but his work is done. Disease, no less imperious in its behests than death, has laid its inexorable hand upon him, and compelled him to give up his post of honour, and of usefulness. Though considerably past his threescore years and ten, which is the allotted span of human life, he appeared to suffer none of the infirmities of age, until a comparatively recent period. It was my singular good fortune to have enjoyed the intimate friendship of all three for many years. With Professors Barker and Smith I became acquainted when pursuing my undergraduate studies in the University, and during the long interval of time which elapsed since then, nothing ever occurred to darken the sunshine of our intercourse, or to diminish, in the slightest degree, our feelings of mutual respect and esteem. Owing to disparity of years and other circumstances, I did not become intimately acquainted with Professor Law until a much later period, but since then our friendship has been close, hearty, and unwavering. I will not attempt to speak of the labours of these distinguished men, or of the claim which they each undoubtedly possess on the homage and admiration of their fellow-countrymen. Differing widely from each other in their tastes and habits, as well as in the special sphere of their pursuits, they each attained eminence in their own department, and have shed a lustre on our common country, which it will not easily lose.

It is with some feelings of personal pride, when speaking of Professor Smith, I recall to recollection the fact that the very first of his valuable

contributions to morbid anatomy, published in the ninth volume of the *Dublin Medical Journal*, relates to a case in which I was concerned. It was that of an old woman who died suddenly, in the House of Industry, where I was then clinical clerk. It was part of my duty to make the *post-mortem* of the body. Dr. Smith, who was curator of the Richmond Hospital museum, very kindly offered to assist me. I have no hesitation in avowing that had it not been for this intervention one of the most unique cases on record would have been lost to science. I was then but a tyro, and I certainly should have failed in making so complete and accurate an examination as he did. It was a case of fatty degeneration of the heart, ending in rupture, in which not only the muscular structure of the heart, but that of most of the organs in the body had undergone this change. There was, in addition, a large quantity of free oil in the blood, and there was the development of air or gas in many of the internal tissues, as well as in the external cellular membrane. I have seen other cases of rupture of fatty heart, but never any equalling this in extent, or in which the other phenomena I have mentioned occurred.

Gentlemen, it is not my intention to say one word in praise of these distinguished men to whom I have referred, and whose loss is universally deplored. I am totally incapable of discharging the duty, were I vain enough to make the attempt. Nor is it necessary. Their lives, their labours, their acknowledged reputation speak for themselves, and are their best eulogy. Wherever the English language prevails, wherever civilization extends, wherever medical science is cultivated, they are more or less known, and honoured, and lamented. And one of them, at least, when other names that now stud the firmament of earthly glory shall have lost their lustre from the rise of other discoverers in the paths of science, will continue to shine forth clear and bright, until the night of nature shall have passed away, and the morning of a better dispensation dawned upon the world.

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*Notes on a Case of Blue Chromidrosis.* By ARTHUR WYNNE FOOT, M.D.,  
Physician to the Meath Hospital.

I AM anxious to bring under the notice of the Medical Society of the College of Physicians a case of blue chromidrosis, in a young lady aged seventeen. The coloured exudation affected principally the forehead and temples, it also appeared beneath the eyes, on the side of the nose, on the chin, and on the back of one hand. The blue discoloration continued to appear for a period of six months, but it is now more than three years since it was last seen. The water-colour drawing I submit to the Society is a very faithful representation of the coloration of her forehead when the disease was most marked. The excitement or agitation of sitting before

the artist for an hour very much increased the ordinary extent and depth of the colour, but not to a greater degree than occurred at home, when her circulation was quickened, and capillary hyperæmia of the face induced by other causes—such as by stooping over her music, or by mental emotion. It was a perfectly genuine case: no one ever had the slightest reason to doubt the reality of the fact that this bluish matter blushed out on the surface of her forehead from within or beneath her skin, her mother and sisters observed it coming out on hundreds of occasions; I saw it myself cover her temple like a purple bloom when she kept her head stooped towards the ground; it was much too remarkable to escape the observation and comments, often audible and uncomplimentary, of passers-by in the streets, she was annoyed at it, anxious to get rid of it, and looks back on the time of its appearance with anything but agreeable recollections, particularly as she suffered much from severe head-aches during its continuance. The colour came off; I frequently wiped it off myself; it stained the lining of her hat, also her pillow-cover, and long after she was well I was shown the stain it had left on the inside cover of her pillow. She came under my observation in the month of January, 1870, a fortnight after the appearance of the blue colour. The appearance of the blue exudation had been preceded by constant violent head-aches for three weeks; for these headaches she had to go to bed, and found that lying quiet in a dark room gave her some relief. She had the greatest intolerance of light and sound during the continuance of these headaches, but was not feverish with them. She missed one catamenial period at this time, but it occurred a week later than the proper time. After three weeks of almost daily headaches the coloration of a “puce-blue” began to be noticed, first as a shade, then as an actual tint; it first appeared under the eyes, then on the left temple, and on the forehead just above the eyebrows, and finally spread over the whole forehead to the roots of the hair. It was at first hardly ever seen on the skin when she got up in the morning, but came out if she laughed or talked much, or stooped to put on her boots, or over her music, or when bending over her lessons. It also came out very much if she saw that her face was being observed. It came out more readily towards evening or night; she felt her head get very heavy towards the end of the day. If she sat down close to the fire and her face got heated, the blue at once appeared in a very marked manner. There were no premonitory symptoms of local heat, pain, or tingling, nor was there hyperæsthesia of the parts affected. There was no lesion of vision; no increase of perspiration had ever been observed about the coloured parts; her eye-brows sometimes swelled. The colour had been coming out a fortnight when I saw her. She had cleaned her face carefully before coming to me; as I looked attentively at her I could only observe that the veins of the forehead over either eye were unusually visible and distended, converging towards the eyebrows.

After she had been some time talking to me I could see that a purple bloom was slowly stealing over the skin, beginning over the outer end of the left eyebrow and spreading across to the right side of the forehead. I wiped the skin clean with a pocket-handkerchief moistened with glycerine, and a bluish stain remained on the handkerchief.

The young lady was small for her age, had brown hair and eyes, was habitually of a high complexion, of a "nervous" disposition, pre-disposed to blush, sensitive, quick, and excitable; of great application to her studies, which were, in my opinion, of too prolonged and arduous a nature for one of her age and sex. She gave me the impression of suffering from congestion of the brain from overwork. Her head-aches, the glistening prominence of her eyes, her excitability, and the great vascularity of her face, suggested this idea. About a week before I saw her she had been walking in her sleep, and been wakened by stumbling over something in a room she had walked into. She was very cold when found, and it was supposed she had been a considerable time out of bed. The somnambulism caused her to get a very heavy cold, for which she remained three days in bed; during those three days in which she remained at rest in the recumbent position, the colour did not come out at all. Having satisfied myself of its nature, that it was a genuine case of blue chromidrosis, I ordered 25 grs. of bromide of potassium to be taken twice a day, and as little attention to be paid to the exudation as possible. I saw her again in a fortnight; the colour had been "very bad" during the previous week, and she had had severe head-aches; the coloration had been observed to be getting more of a black than a blue tint, since I had last seen her; her mother thought the mixture (bromide of potassium) had had the effect of bringing out the colour more. It had of late appeared beneath the eyes, and extended across the bridge of the nose. I washed the colour off part of the forehead with wool wetted with chloroform; the wool was stained blue. I tried to get some of the colour off part of the forehead with a camel's hair brush dipped in glycerine, intending to lay the pigment on a glass slide, but it was too firmly adherent to the skin or its secretions to come off in this way. When the purplish colour was wiped off with chloroform on wadding, the cleansed skin looked reddish, as if sun-burnt; this seemed to me to be more due to local increase of vascularity than to any irritating effects of the chloroform used. I ordered her to keep an ointment, of equal parts of *unguent. plumbi acetatis*, and *unguent. oxidi zinci*, to the coloured parts. This ointment did not appear to do any good; I had thought it might have some influence on the undue vascularity of the parts, and that its greasy nature, by preventing the access of oxygen to the skin, might prevent or retard the formation of the blue colour, resulting from oxidation of the colourless indican. About this time she complained of her stomach being often actually sick, and of a frequent sensation of nausea;

her appetite was bad, she hated eating, and always felt tired. The bromide of potassium was stopped, a mixture with dilute hydrocyanic acid and calumba ordered. I cleaned the left half of the forehead with ether and wool, and painted a layer of flexible collodion over it, leaving the right half of the forehead untouched. In 24 hours the colour had come out on the *right* side, but in a less degree than usual; there was none at all underneath the collodion. I now cleaned the colour off the right side, still leaving the flexible collodion of the day before on the left side of the forehead; in 48 hours after this second experiment no colour was observable on any of the skin covered by the collodion, but a little appeared above the limits of the collodion, between its margin and the roots of the hair. There was no colour seen on the *outer* surface of the collodion. I did not use it for the purpose of detecting the application of colouring matter, though I know it has been used for this purpose: in some cases an artificial colouring matter has been found on the *outside* of a layer of collodion, and it has been rather hastily inferred that it was put there by the patient—a conclusion not at all necessarily correct, because ordinary collodion, which appears to have been used in the cases I refer to, is endosmotic, and a secretion from the skin could pass through it easily, and, oxidating on its outer surface, could produce colour from an uncoloured secretion if indican were in it. Flexible collodion would present transudation, owing to the colloid matters contained in it, and if colour appeared on the outside of flexible collodion, which had castor oil and Canada balsam in it, it would be very hard to account for it in any other way than by its application from without. The object I had in the use of the flexible collodion was to effect what the ointment of lead and zinc had failed to do, namely, to make a local constriction of the vessels of the parts, and to exclude the air from them. The number and size of the veins about the temples and outer borders of the eyebrows was very remarkable. Thinking that 72 hours' absence of the colour underneath the collodion first put on was an indication to persevere in the attempt at mechanical repression, I cleaned off, with ether, the former application, which was now cracking and peeling off, as if in process of desquamation, and covered the whole forehead again with flexible collodion. In 48 hours there was only the slightest appearance of blue, and that was *beyond* the limits of the collodion, among the roots of the hair, where it would have been very inconvenient to apply the collodion; there was none underneath the collodion, but the right eye was tender and watery, and there was puffing of each of the lower lids on both sides, with a slight bluishness. She had also had a bad attack of headache on this day. On account of this apparent threatening of an outbreak beneath the eyes, where hitherto the coloration had never been extreme, I put no more collodion on at that time, but cleaned the forehead with ether, leaving the skin clean and un-

**covered.** For a whole day there was no return of blueness, but on the **second** day the forehead again became blue, and I re-covered it with flexible collodion. In a few days the blue began to come out in new **places**, higher up among the roots of the hair than it had done before, **on** the upper lip, and in the depression between the lower lip and chin.

At this time a catamenial period had lapsed ten days without any appearance of menstruation, notwithstanding the use of various domestic remedies. Her appetite was now good, and the sickness of stomach quite gone. On various occasions, while the forehead was kept sealed up with flexible collodion, I observed a purple bloom over the lower lip and chin, the upper lip, and part of the left cheek. I frequently examined the coloured parts of the skin with lenses of various powers, and could never see any spots, dots, or lesions of it. Menstruation came on a fortnight late; when it was over, she began a course of Fowler's solution and Co. decoct. of Aloes, and at the next period she was quite regular as to time and quantity. On one occasion, 14th March, after washing her hands, she found the back of the right hand had the bluish colour—this never occurred again. On many occasions, while attentively observing the veins on the lower part of the forehead, which converged through the band of blue towards the root of the nose, the eyebrows, and the external angular processes of the frontal bone, I distinctly saw that the deepest streaks of colour followed the courses of the veins, and had the appearance (with a lens) of a very finely punctuated blue deposit on the skin. Whenever she laughed, numbers of small veins became visible, converging towards the lower part of the forehead. At this time she was sometimes a whole day without any "blueness." The blueness certainly had some connexion with the headaches, it was nearly always preceded by one, and before the head-ache she used to get a feeling of weight and heaviness in the head referred to the vertex. The headaches often went away very suddenly. She was kept on arsenic for a month, between two catamenial periods. Fowler's solution was the preparation used, in small doses—two drops twice a day, gradually increased. The collodion was given up as a failure, after a long trial of it; it only seemed to push the colour out elsewhere, and was, besides, an inconvenient application from the dirty and scaly look it gave the forehead. As I held the idea that the blue was indigo blue formed by oxidation from indican exuded on the face, I determined instead of the collodion to use a deoxidising lotion, or one theoretically so, and she employed one of hyposulphite of soda  $\frac{3}{4}$ ss., water, 4 oz., keeping the forehead as constantly wetted with this as possible. She considered this lotion decidedly checked or diminished the blueness, and the intervals of freedom from it became much longer; but, after a freedom of nearly ten days, an over-excitement, produced by joy at one of her friends returning after a long absence, brought back the severe head-aches, and a great eruption of

the blue pigment. The tendency to head-ache was such, that stooping to write a letter brought one on; the least thing made her blush, and when she did so, she blushed blue on the forehead; the colour was much more likely to come on warm days or when exposed to the sun. In the month of June her menstruation became permanently regular in date and quantity. It had been typical before this illness; but since its commencement, had been scanty and postponing. The colour now began to come out less often, and was of a lighter colour, her head-aches began to stop, and her stomach got all right, but she could never be got to eat meat except by force.

She had, at this time, been three months taking arsenic, with decoction of aloes at the catamenial periods. By the end of June the condition had almost quite disappeared, but even in the following October, sometimes when she was much excited, a bluish shade seemed to appear for a short time, but no palpable exudation that could be wiped off appeared then or since. I attended her two years afterwards in measles, and though I watched the skin of the face with much curiosity during the efflorescence of the eruption, which was profuse, I observed no peculiarity in the colour of the skin or of the eruption.

The treatment, in summary, may be said to have been first directed against congestion of the brain, induced, as I thought, by over-application of the mind, and with this object she was given considerable quantities of bromide of potassium; she then had a long course of arsenic, occasionally interrupted. The repressing effect of flexible collodion seemed to cause the outbreak of the pigment elsewhere. The strong lotion of hyposulphite of soda was as effective, and more cleanly and convenient in keeping the face clean. The prognosis made at the commencement was that it would disappear, I did not say when, and that it would not endanger her life. With the assistance of Professor Emerson Reynolds, I examined her urine for indican during the height of the exudation, but the method I adopted was the process recommended by Shunk, and the quantity I obtained, 8 ozs., was insufficient to give satisfactory results in this rather complicated method. I was not, of course, then aware of the qualitative test for indican in the urine put forward by Dr. F. Laking, in the current number of *St. George's Hosp. Reports*.<sup>a</sup> The young lady has now been more than three years quite free from any cutaneous disturbance, is free from head-aches, regular in all details of menstruation, can eat meat, and enjoys good general health. Her friends and relations consider she looks much better and healthier ever since this illness.

The coloured tract in her case, as illustrated in the drawing, has a great similarity in the regions affected, though not in colour, to that shown in this drawing of a young lady of fifteen, whose case was brought

<sup>a</sup> Vol. vi., p. 97.

by Sir B. Brodie, before the Medico-Chirurgical Society, and, I may observe, that this latter patient perfectly recovered.

**DR. STOKES** said the Society must be greatly indebted to Dr. Foot for bringing this subject before them. As the great object of the Society was that members should contribute anything in their possession likely to add to the general knowledge of the subject under discussion, he might mention a case in which this remarkable condition of the skin existed for a very considerable time. A young woman, of full, rather voluptuous habit, who had been in perfect health, was exposed to mental depression in consequence of a difference between her and her parents as to an affair of the heart. She remained for some time in rather a low, depressed, condition, taking very little interest in the world, although she moved in fashionable society. Gradually a bluish hue appeared, but always under the eyes. It extended to about an inch, or an inch and a-half, below the lower eyelid, and it remained singularly stationary. On some days the hue was less marked than on others. The curious part of the case was that this lady had no head-aches; but after a month or two she became subject to singular trances, in which she would lie, to all appearance, insensible for an hour or two; latterly, indeed, the attack lasted several hours. On one occasion she remained perfectly insensible for five hours. While in this condition—except that she had not the shrunken face—an ordinary observer would believe her dead. The respiration was singularly low, so low as to be hardly perceptible, and only to be ascertained by a looking-glass. The pulse was slightly accelerated, but feeble; in this condition of perfect stillness she would remain for hours, and then suddenly, and without any effort, awake from it and speak. This continued for many months. She had an attack of trance every day, and sometimes twice a day. This lady was greatly distressed in consequence of the result of a consultation held on her. Two medical men were called in to see her, and they foolishly communicated to her their opinion, that the whole matter was simulated—an announcement which produced on the girl a most terrible effect. The refusal of food, the length of the trances, the lowness of the spirits, all were immensely increased. At the end of a year, one of her parents being persuaded there was no affectation, consent was given to meeting her wishes. She now rapidly recovered, and has remained perfectly well ever since. In this case little or no medicine was employed. It was hoped that attention to her general health, supporting her strength, and time, would do all that could be done for her. With a fine cambric handkerchief, a slight, but only a slight, tinge could be obtained by wiping the coloured part, and, whenever a certain amount of pressure was made on the part, there was, for a time, a great diminution of dis-



coloration. There was no increase of vascularity or determination of blood to the head.

DR. GRIMSHAW was familiar with one of the cases referred to at the conclusion of his paper by Dr. Foot, who spoke of it as an intermittent case; but he (Dr. Grimshaw) was not quite clear whether it could be properly so described; for he found that whenever the young lady carried out his directions the colour always diminished. She was of a very nervous temperament, and might be called an hysterical girl. She was very fond of going out to evening entertainments, and did so very frequently. The directions he gave her, and which Dr. Foot had previously given her, were, that she should, to a certain extent, abstain from these entertainments, and not over-exert herself. Dr. Foot had treated her with arsenic. He (Dr. Grimshaw) treated her with iron and arsenic, and when she took what was ordered, and followed his directions as to observing regular habits, she invariably improved. The returns of the disorder depended on the care she took of herself, rather than on any periodicity of the disease, which he had never observed. There could be no question whatever about the genuineness of this case. He had sat on several occasions in the young lady's company, after she had carefully washed her face, and had seen the colour gradually exude from the skin. One of the most interesting points in this disease was its connexion with head-aches. These head-aches were often brought on by over-exertion or any debilitating cause. Whenever the young lady referred to was exposed to these influences, the discoloration was produced. She was about twenty-two years old.

DR. FOOT said the lady whose case he had brought forward that evening was not subject to the influences referred to by Dr. Grimshaw. Her mental excitement arose entirely from study, and not from dissipation. She was the orphan daughter of a clergyman, living a most retired life, and had been engaged too much in studying languages, music, and drawing; the congestion of the brain resulting therefrom had, in his opinion, induced the disease. He (Dr. Foot) had a prejudice against the use of iron, and preferred arsenic in these cases. From Kollman's observations of a man subject to cyanidrosis or blue sweating, it was found that the sweating was increased whenever he took iron; and Scherer having analysed the sweat, found that the blue colour in this case seemed to depend on the proto-phosphate of iron. It had been observed that the blue coloration was most intense whenever the patient was using preparations of iron internally.

The Society then adjourned.

# PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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## THIRTY-SIXTH ANNUAL SESSION.

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DR. EVORY KENNEDY, President, in the Chair.

The PRESIDENT read the following Inaugural Address:—

GENTLEMEN—This is the third time that I have, through your partiality, had the honour of delivering an Inaugural Address from the Chair of this Society. The first time was on the interesting (now the historical) occasion of the foundation of this Society in the year 1839. I subsequently had the pleasure of addressing you in the year 1849; and, in the language of a popular orator with whose dicta we are all familiar since our childhood—"Here we are again."

When I bring to your recollection the position occupied in our branch of the profession in bygone times—nay, when I recollect what occurred more nearly approaching to our own day, and that although a Baudelocque, a Mauriceau, a Denman, a Hamilton, a Fielding Ould, and a M'Bride, an Evory, and a Joseph Clarke, stood out in bold relief, and asserted by the force of their talents and writing an individual respect and admiration, yet the gynæcologist held a mere toleration in the profession at large—when, I say, I bear these facts in mind, and look around me in this great Society at the mass of talent, energy, deep thought, industry, and successful research, with which I am at this moment surrounded, I may say, with truth and honest pride, that I wonder with exceeding amazement at the position we have established and justly occupy, as a body, at the present day.

Gentlemen, I assert, without fear of contradiction—and, of course, with all due modesty—that the present enviable estimation in which our branch of the profession is held is due, if not exclusively, in a great measure, to the existence and to the labours of this and kindred Societies. I am quite justified in saying this Society—first, because it was the first established in these kingdoms; but, whilst we claim priority, we can look with parental admiration and pride to the labours and transactions of the Obstetrical Societies in the sister kingdoms and elsewhere. The channels of investigation opened up by your transactions—the philosophic system of analysis incurred in preparing papers—the critical test of the discussions to which contributors were obliged to submit—

have, one and all, resulted in developing our branch of medical science in a geometrical progression; and society, and, let me add, the gynaecologists, have mutually reaped the benefit.

At first, as our branch of medicine expanded their investigations, and acquired a knowledge of new diseases, or the power of classifying old ones under rational and appropriate names, and directing and applying appropriate treatment, there was heard an undergrowl, low but long, from a few of the less generous members of the profession, who had been in the habit of treating what now transpire to have been obscure diseases, possessing distinctive characters, and requiring distinctive treatment upon general principles. The treatment was usually of the most simple, not to say empirical kind. The practitioner had what my late distinguished and witty friend, Sir P. Crampton, would have called "three shots in his locker" for female diseases. A vaginal discharge was dealt with by an alum lotion, a lumbar pain by a strengthening plaster, and iron constituted the universal remedy for all female complaints. Thus, in the language of the poet, "Thrice was he armed;" but, alas! "had he his quarrel just?"

The light thrown upon the exploration of female diseases by the speculum, the stethoscope, the microscope, and the sound, the tracing the host of diseased actions and sufferings in the female (many of which had hitherto baffled us) to their true causes, and opening up the broad field of reflex actions and influences, were met by a significant shake of the head, or a remark that the midwives were carrying things too far. Then it was boldly stated that the specialists were advancing themselves at the expense of the profession, and this should be put a stop to. Gentlemen, as well might they have tried to stop the tide with a pitchfork as to stop the onward rush of investigation and extending knowledge that has borne down all opposition and resistance in our profession, but especially in our branch of it, in the last thirty years. I rejoice to say that all these paltry jealousies have been dissipated under the sunlight of knowledge, and a liberal profession now hails the progress and applauds the labours of all its branches with equal pride and generosity. If proof of this change of feeling be called for, it is appropriately afforded in this hall at this moment by my addressing this distinguished audience, embracing the *élite* of every branch of the profession, in the one word applied to Wren's *chef d'œuvre*—"Circumspice."

As, in addressing you from this chair, I feel I shall best discharge the duty you have imposed upon me by turning our sederunt to practical account, I venture to remind you that in the year 1855 I published a treatise upon "Benign Inflammation and Ulceration of the Uterus," illustrated by drawings. It was my intention to have followed this by a paper on the "Specific," and another upon "Malignant Inflammations" of

these organs, illustrated by drawings, the results of my own observation throughout a prolonged practice.

The first portion of these subjects I shall claim your patience in bringing under your notice this evening, and, if spared, perhaps the second on some future occasion.

It served our purpose better, in treating of these affections, to subdivide their consideration under the three heads—benign, specific, and malignant—than to adopt the benign, semi-malignant, and malignant divisions coming now into general use—for this reason, that it enables us to bring into more prominent relief the objects I have in view, namely, the tracing to their fountain head those causes which constitute the distinctive characters of the diseased action in each, and to direct our treatment to the curative treatment available in each.

For instance, we shall find, as we proceed in our investigations, that of the cases presenting at first view apparently the same appearance and characters, one is simply and easily treated, recovering rapidly; another resists our efforts, until we discover the occult distinctive character influencing the diseased action, and this detected, and the prophylactic treatment necessary applied, the healing action commences and continues to our satisfaction.

When we use the term specific we bring prominently before our mind the two facts—first, that a specific disease is a disease *per se*, and consequently requires a *special* investigation; secondly, that it also requires a special treatment, based upon the knowledge thus acquired.

Paget has shown us that, however defined, apparently, the line may be, as to structural peculiarities, in tumours indicating their benignity and malignancy, there are other considerations influencing their fatality which must enter into our philosophy in dealing with them; and every man must admit the accuracy of his observation on the value he attaches to the *condition* of the patient, the same diseases appearing innocent or fatal as they occurred in different persons and under different conditions.

It seems a simple matter to introduce a speculum, detect an ulcer accompanied with more or less metritis or congestion of the uterus; to apply caustics, scarify, and administer tonics—and no doubt a certain proportion of the cases presenting themselves may be cured or benefited by this routine treatment—but what of the cases that baffle us?

When we find an eminent Viennese physician (Pollak) thus generalize upon these ulcerations, in cases of chronic metritis and mucous discharges from the vagina, varying between slight excoriation of the epithelium to deeply invading sores, which, he says, owe their origin to the *mechanical* irritation caused by the contact of morbid secretions with the mucous surfaces, in consequence of which the epithelium, after being kept constantly wet with discharge, is destroyed—we must avoid the too common habit of looking upon all cases of uterine inflammation and

lesions as alike, and treating them by fixed rules, without regard to the specific character with which each case may be invested.

For instance, cases sometimes present themselves in which large and extensive uterine ulceration is present, with apparent phagedenic characters, with hardened base and intense pain, evincing most of the constitutional symptoms of carcinoma—wasting, anxiety, langour, and exhaustion on exertion; yet such cases are not necessarily malignant in their nature, and will heal under properly directed treatment.

The most experienced practitioner may be deceived in such a case, and find his treatment result in recovery, in place of death, as he had anticipated. •

And yet there is usually a *je ne sais quoi* about these cases that leads the practitioner to submit them to treatment almost contrary to his own judgment and expectation of beneficial result.

Such a case was Mrs. H., who was assisted into my consulting room in an apparently deplorable state. She was attenuated, bowed together with pain, wasted, and bloodless from repeated uterine hæmorrhages. The neck of the uterus was a mass of ulceration, with hardness of the base and texture of the organ. A tumour could be felt offering a hard resistance over the pubes, and the organ appeared enlarged to four times its natural bulk. She suffered from occasional retention of urine, and the pain produced by walking or the motion of a carriage was agonizing. There was a copious fœtid discharge, with excessive menstrual periods, passing into hæmorrhage, which had reduced her to the lowest stage of debility. The countenance expressive of pain and bloodless, but not exhibiting the leaden or dirty discoloration so often observed in carcinoma. The size of the tumour also was beyond what one would expect in this. Her age was about forty, and she had had two children, the youngest twelve. She had been gradually becoming delicate, as she described it, for two years. She suffered from dyspepsia, constipation, occasional attacks of gout, chiefly in her wrists and fingers, but which had caused less inconvenience within the last two years. Her urine contained an abundance of uric acid and urates, but no albumen or excess of sugar. Her father died of gout, and her mother had suffered from it occasionally. She had sleepless nights, intense lumbar pains and pelvic distress, aggravated by the pressure of the enlarged uterus on the bladder. She was consigned to my care from the country as a case of malignant ulceration of the uterus in its advanced stage.

My first impression was, I confess, rather confirmatory of this diagnosis. But, when I had thoroughly investigated the case, a gleam of hope shone upon it, and I clung to the much-increased size of the uterus, the analysis of the urine, the gouty diathesis, and her own and her family history, as offering her an escape. The ulcerated surface was cauterized freely and repeatedly with chloride of zinc, followed by nitrate

of silver; repeated sloughs were thrown off. Her strength was maintained with nutritive food; a fair allowance of wine administered. The opiates, by which alone she had procured sleep, were desisted from, and hyoscyamus, colchicum, bark, iron, and Vichy water relied upon. Her general health speedily improved, the ulcer contracted rapidly, and in the course of three months healed; the uterus, at the same time, diminishing in size, relieving her from distressing pressure on the bladder, and she returned to the country recovered, and able to walk and drive without inconvenience.

The sequel of this case, however, bears a moral. She had scarcely been restored to what was to her, comparatively speaking, crude health, when the gout, which had, throughout her uterine attack, been nearly suppressed, or rather confined to the uterus, again threatened her, but with more determination than formerly. Not merely her fingers and wrists, her knees and her ankles and feet were successively and severely attacked, assuming the mixed gouty rheumatic character; and when I last saw her, at an interval of some years, the fingers of both hands were fixed; she had chalk stones and contracted joints, her knees and ankles permanently enlarged and fixed—yet the uterine inflammation and ulcer never returned; the uterus had diminished to little more than twice its natural size, and she was totally free from uterine distress.

A pendant for this case is that of a staid elderly gentleman, married to a young wife, and father of two healthy children, who consulted me for a urethral discharge accompanied with an angry looking ulcer at the underfold of the prepuce. He had had occasional attacks of gout, and was a convivial person, partaking generously of wine and the pleasures of the table, to which he had been more than usually exposed shortly before. His wife was under treatment for slight leucorrhœa, with a benign abrasion on the anterior lips of the os.

I stopped the husband's wine, gave him a weak zinc injection, and insisted upon frequent cold ablutions. Caustic and the zinc lotion were applied to the ulcer, whilst I put him on a course of Vichy water. Man and wife were both perfectly well in three weeks; never had the slightest inconvenience afterwards, and have since had three healthy children.

*Rheumatism.*—We should naturally expect that the uterus and its appendages would, in rheumatic diathesis, partake in the diseased condition as other structures of the body do, and such I have quite satisfied myself is the case.

Well marked rheumatism in these structures is, however, not so easily diagnosed as in other parts of the body.

When we meet with a woman of markedly rheumatic habit suffering from pain in the uterine region—the pain more distressing in bed, shooting from the sacrum through to the pubes, with no organic

alteration beyond slight congestion—not assuming a periodicity, as in neuralgia, coming for a time, then disappearing without cause or treatment—the uterus not tender to the touch, unless when the pain is actually present, and often more acute over one or other ovary or ligament, more especially if rheumatism, either acute or chronic, with or without fever, be present in other organs—then we are justified in diagnosing the case as one of rheumatism in these structures, and treating it accordingly.

There is no tendency in these cases to pass into ulceration; therefore, if an ulcer on the os or neck occur, it is but an accidental accompaniment.

We are, at first, anxious in this case from the existence of the pain, exciting our apprehensions for the occurrence of the malignant disease, but the fitful occurrence of the pain with the absence of organic changes sets these fears at rest.

The treatment is obvious enough, but the disease, although sometimes easily cured, occasionally resists treatment, and continues to occur at intervals for years. Colchicum, quinine, the use of the warm hip-bath, counter-irritation, and the external use of belladonna and chloroform, affording relief; to these may be added occasional opiates—as Dover's powders, and the mineral waters and baths. In very obstinate cases even change to a warmer climate becomes necessary.

The congeners of rheumatism, with which it is most likely to be confounded, are neuralgia of the uterus and appendages, and what was known as irritable uterus.

The former affection is most frequently met with as a symptom of dysmenorrhœa, but is occasionally observed independent of this. One of the purest cases of the kind I recollect, was that of a lady under my care for a chronic ulcer in the uterus, of long standing. She had a periodic hysteralgia of the most agonizing description, recurring with extreme regularity each day, exactly as we observe in brow ague. It lasted for three hours, increasing in intensity for an hour and a half, and then subsiding equally gradually.

Her case was extremely obstinate, resisted quinine and iron, and eventually yielded to arsenical treatment.

The neuralgic accompaniments of lesions of the female organs are more generally observed to occur in the cutaneous nerves of the iliac, abdominal, and thoracic regions; and, although they usually yield to the cure of the lesion, of which they are symptomatic, assisted by quinine, iron, arsenic, and the cauterization: yet they sometimes resist all treatment, and, in order to break the habit of the pain, sub-cutaneous injection of morphia becomes necessary. This, however, is only palliative, and I have often been impressed with the idea that the remedy, if long continued, is often worse than the disease.

The irritable uterus is, in my mind, a symptom rather than a disease, and is to be found as an accompaniment of the different forms of acute and sub-acute metritis, including the peri, para, and endo-metritis. I have generally found it best treated by dealing with the disease of which it is symptomatic; and the repeated application of two or three leeches directly to the os.

Uterine determinations, followed by lesions, occasionally occur in the progress of fevers, but particularly in the exanthemata and typhoid fevers. I have repeatedly traced abrasions and ulcerations occurring in girls to these causes, especially as a sequela of scarlatina. Dr. Gull has drawn attention to their occurrence in typhoid fever.

I have met cases of the latter disease in which, in ulceration of the bowel with protracted healing, molimina occurred, and the recurrence of the monthly period was attended by a vicarious hæmorrhage from the bowels for months. Although causing much alarm, it was always attended with benefit to the patient. This symptom continued until every lesion of the bowel disappeared, when the uterus recovered its delegated function.

In treating vaginitis and endo-metritis, there is a resolution or result of the inflammatory action of these canals that we must never lose sight of, and this whether the inflammation be of a benign or a specific character. I allude to adhesion of the walls, and consequent closure or narrowing of the canals. The latter result, as well to the married as to the single female, is important; but to the former, occlusion of the vagina or uterus is such a serious source of inconvenience as well as disease, as generally to require one of the most dangerous and critical operations in surgery for its relief. I have already drawn the attention of the profession to the means of performing this operation, in several published cases. These cases most frequently result as the consequence of *post-partum* inflammation; and, as they are usually the consequence of neglect, require our closest attention to prevent them, and constitute an opprobrium to our art when they occur. The following case offers a remarkable instance of this assertion, as well as of nature's attempt to remedy the neglect.

*Case of Occlusion of Vagina with Retention.—Operation.—Ultimate Rectal Menstruation.*—In March, — Bowles was admitted, suffering from the results of a tedious labour sixteen months previously. The delay in her labour was ascribed to a band that crossed the vagina, stopping the descent of the head, but which was reported then to have given way.

She was treated for vaginal inflammation and fever after delivery, and recovered slowly, but never menstruated since.

For the eight months before her admission, she had been seized, about



the 3rd of each month (her usual period for menstruating), with pains resembling labour pains, which continued for three days and nights, attended with great suffering on micturition. On examination the vagina was found completely obliterated; nothing remaining above the vestibule. A painful fungus growth existed at the meatus. The abdomen was swollen; and a distinct circumscribed tumour was felt between the pubes and umbilicus. The monthly recurrence of pain had been more severe latterly, and accompanied with a strong forcing sensation in the rectum. A tumour, not unlike the distended gravid uterus, was to be felt through the recto-vaginal septum. This sensation continuing, decided expulsive pains ensued, during each of which the united band connecting the labia was sensibly protruded, being swollen, tense, and shining, with a point, of a deep livid hue, standing prominent, fluctuation being perceptible. I made a free opening with a bistoury, and a large quantity of foetid menstuous fluid escaped, and continued to do so for two days, when it appeared mixed with pus. On pressing the tumour in the rectum the fluid was made to flow more freely. She had some inflammatory symptoms of the peritoneum, requiring leeching, mercury, and opium, from which she rallied; and on the 4th of April, the report was that menses and pus were flowing from the artificial opening, which had been treated with tents, and a bougie, which she was trained to use regularly. There was now found, on the introduction of a male catheter, a communication between the labia opening into the vagina, and what remained of the uterine tumour, from which the pus escaped. The fungoid growths were removed, and on the 22nd of April she left the hospital, the opening remaining unobliterated. On October 29th she returned, the opening having been permitted to close; and, after a severe paroxysm of pain, menstrual fluid having escaped through the rectum. On November 24th, I opened up the vagina with the knife, and established a communication with the upper chamber, admitting of the two fingers passing freely into it. A communication, about the size of a silver penny, between this chamber and the rectum was found, through which the menstrual fluid had escaped, as we saw, into the latter cavity. This vaginal passage was kept open by the introduction of tents, bougies, and candles, until the healing was complete; and she was retained in hospital until the recurrence of the next monthly period, which was free from pain, the discharge coming freely *per vaginam*, and a little *per rectum*.

The tumour had nearly disappeared, and she was discharged, with a bougie, and directions to use it, or a candle, with regularity, in order to prevent the contraction of the vagina. She was lost sight of for many months. When she returned it was found that she had neglected the use of the candle. The vagina was again completely occluded, but she menstruated regularly and without serious inconvenience through the

**rectum.** As she was now a widow, there was no person inconvenienced by this arrangement but herself; and as she approached the period of life at which this misappropriation of the rectum must naturally cease, it was deemed more advisable to allow her to continue her arrangement, and turn the rectum to account for the double purpose, than to make any further attempt to restore the vaginal passage; and this the more especially as the aperture in the recto-vaginal septum left little hope of *diverting* completely the discharge into what a witty judge, a fellow-countryman of ours, termed "an ancient watercourse."

The specific inflammation to which these structures are obnoxious, *par excellence*, is syphilis. Its typical form, the syphilide, or true Hunterian chancre, that which stamps its individuality, occurs from inoculation of the skin, or mucous membrane, by chancre matter, and by chancre matter only, and that only at certain stages of its development. This typical disease, or primary sore, imbibed or absorbed from *without*, but from which is subsequently absorbed, *within*, a poison producing a Protean train of symptoms, the result of self-poisoning, known as secondary and tertiary symptoms, and syphilitic intoxication. I exhibit to you here, as a precaution, a good specimen of this on the junction of the first and second fingers of a midwife, who contracted the disease from attending a patient in labour with a chancre of the vagina of about ten days' standing. Here you have the indurated edge, circular outline, elevation and roseate tint, evincing its angry character, and ample plastic effusion in its base.

You must not expect, however, so well-marked a chancre in the uterus, although you will occasionally meet with it on the female external parts, spreading into the vagina. This example, taken from a woman at an interval of three weeks from impure connexion, affords the best instance I have of a primary syphilide. We must recollect that the mucous and muco-cutaneous membranes do not undergo to the same extent the plastic infiltration, that we observe in the skin. This example is more frequently met with, and corresponds with what is known as the mucous patches.

This you will perceive is more superficial, more dusky, has less areola, and less excavations, exhibiting altogether a less angry character.

It is quite extraordinary how little inconvenience these ulcers cause to the patients at the earlier stage of their development; unless, indeed, they are seated in the external organs, or low in the vagina. Nay, I have seen them extend to the phagedenic, and even sloughing stages, with comparatively little local inconvenience, and scarcely attracting the patient's attention until secondary symptoms induced her to take advice.

This explains, perhaps, one reason why we so rarely can find the characters that mark the true Hunterian chancre in the uterus, as we rarely see it until the stage has passed over in which these characters are

the best marked. This is so much the case that some of our most esteemed syphilologists even doubt the existence of a true primary chancre occurring on the os uteri. I need scarcely insist upon the importance of being able to pronounce the true nature of these ulcers. Ricords' test of inoculation, although of great value, is only available at certain stages of development of the ulcer, and ceases to be available when granulations occur, discharging pus. I here exhibit No. 20, a drawing, showing two ulcers—one on the os uteri, and another on the wall of the vagina—and although the patient shortly became covered with a papular rash, and exhibited all the signs of syphilitic intoxication, both these sores resisted inoculation, tried certainly only on one occasion. I am indebted to my friend, Dr. Morgan, for this case, which I conclude failed, from the period of incubation of the "inoculation poison" having passed over, and that of self-poisoning, or diathetic absorption, having commenced.

In locally treating these cases, the washing the ulcer carefully over with acid nitrate of mercury twice or three times, at intervals of two or three days, followed by solution of nitrate of copper or of silver, I have found answer best. Intermediate ablutions of solution of the chloride of zinc and black wash may be used with advantage.

Mercury, administered carefully and with discrimination, is essential for the prevention of the legion of secondary and tertiary symptoms which constitute the gravamen of the disease.

No doubt in most cases the true chancre, and in almost all cases the mucous ulcers, can be cicatrized by the use of nitrate of mercury, or nitric acid, followed by caustics and black wash, although certain chancres may resist for a long time. But then comes the consideration, whether we risk a possible injury by *commission*, by administering mercury, or the injury of *omission*, by its abstention. The train of symptoms and experience can alone guide us in this selection. Where the ulcer assumes a gangrenous, or phagedenic character, of course mercury must be withheld; but where the physician is unmistakably convinced, as well from the appearances as the history of the case, that he is dealing with a true syphilide, and looks forward to the almost certainty of the syphilitic diathesis, with its grim array of Protean diseases looming in the distance, delay in the administration of the specific, alone capable of preventing or arresting this array, is unjustifiable, not to say inexcusable.

The primary chancre occasionally presents itself to our notice as the result of direct contagion in the nipple, from applying a child to the breast suffering from a chancre or mucous patch in the mouth, the result of contagion on its part through the mother, or otherwise. Such a case I here exhibit.

This woman unfortunately applied a friend's child to her breast, her friend suffering at the moment from sore nipples after her confinement.

Within a week after the first application of the infant a zone of inflammation surrounded both nipples, which passed rapidly into ulceration of an angry character. Several mucous ulcerations were detected on the inner surface of the lips and palate of the infant of her friend, and chancres were detected surrounding both the mother's nipples. Large purpuric spots were just becoming perceptible on the neck and back. Ulcerations were found in the wall of her vagina, spreading from the edge of the vulva, which, she stated, had caused her considerable inconvenience for a week before her confinement, three weeks since. It then transpired that her husband had been under medical treatment, and was taking mercury.

Here then we had primary sores in three individuals; contracted in the mother of the child originally by coitus; then by the infant, apparently by sucking its mother (but if so, how did the primary contagion reach the mother's nipple?), and eventually extending to the female friend by the suckling of the child. The chain is complete if we beg the question, that the mother, suffering from the vaginal irritation in her confinement, conveyed the contagion to her nipples, in drawing them out to enable the child to grasp them, and the consecutive order of the seizure in each with the time that elapsed, a month from the first contagion, allowed just time for the contagious poisoning of the wife, the child, and the friend to develop. Another explanation might have been, the imbibition of the chancre matter into the mouth tissues of the infant, in transition through the vagina; or, possibly, by the finger of the midwife inserted in establishing its respiration.

At first sight it might appear that this case furnished an answer to Prieur, Ricord, and Diday, as to the impossibility of the transition of syphilis from the mother to the foetus in the last months of pregnancy; but it does not, as their objection applies to constitutional syphilis, which did not, nor could it, from its history, have done so, as the contagion was only contracted by the mother ten days before the birth of the child, and it had mucous patches perceptible on its mouth within a week after its birth, and no other symptom of syphilitic poisoning whatever.

Curran's case, to which I now draw your attention, takes up the syphilitic intoxication at a further stage of its progress. This woman was delivered, on the 6th of February, of her sixth child; her previous children having been healthy. Until eight weeks before her delivery, she describes herself as in good health. Her symptoms commenced with pain and scalding in micturition, followed by ulceration of the vulva and labia, copper blotches—ulcers in tonsils and surrounding the nipples; took mercury to salivation three weeks after attack.

Her child was born alive, but attacked with excoriation and ulceration, extending from the verge of the anus to the buttock, on the fourth day after its birth. Here the symptoms in the parent, took the ordinary

consecutive course of syphilitic intoxication. But what are we to state as to the date of the child's poisoning? Was it poisoned *in transitu* or by hereditary taint? Did the four days suffice to contaminate and develop the poison? The child was born apparently free from disease. We are somewhat in a dilemma in whichever way we attempt to explain it. If the child was contaminated by the inter-current circulation "in utero," it must have been within the last two months of gestation. Then, what of the improbability of such contamination at this period, as maintained by the high authority of Ricord and the others?

The evidence is in favour of poisoning through the maternal circulation; and the rapid engorgement of the muco-cutaneous structures after birth, in this and other similar cases, would tend to prove that exposure to the atmosphere exercised some influence in determining and developing these lesions in the nose, lips, mouth, and anus, so generally and speedily observed after birth in tainted children.

Skellaghan's case is so far interesting as showing a still further development of the ulceration, as affecting the mammæ. This woman was delivered of a dead and putrid child, with extensive separation of its cuticle, on the 7th of January, and on the 4th of June, five months afterwards, her breasts presented the appearance delineated in this drawing—namely, a tuberculated ulceration, with coppery crusts, spreading from the nipples, in a zone, and engaging at least a third of both mammæ, the nipples so involved in the ulcerated mass as to be scarcely distinguishable from the rest of the diseased structure. A circumstance worth considering in this case is, that the child having been dead, and, of course, no suckling attempted, yet the disease commenced with an excoriation of the left nipple, followed by the right, which would appear to evince a law of selection in the organs attacked, by this strange poison depending upon the receptivity being developed at the moment, and their functions in the animal economy being prepared for action although not called into operation.

The only other evidence of syphilitic intoxication Skellaghan exhibited whilst under treatment, was an example of secondary eruption, rarely met with in practice, exhibited in this drawing upon her hand.

Before passing from this branch of our subject, it may be interesting to exhibit these two drawings. They are of a child four years and nine months old, with a group of about 30 warty excrescences or vascular verrucæ springing, as you see, from the vulva; no ulceration and little inflammation is perceptible. This poor child had been subject to an attempt at intercourse two months previously, made by a plasterer engaged in her father's employment, who was supposed to be suffering from syphilis at the time. No other symptoms evinced themselves in this case, which was treated by removing the warts with

cissors, followed by nitrate of mercury applied to the wounds and an iterative mercurial course.

The true venereal warts, classed with primary disease from the order of their occurrence, have their most common seat in the vagina, where they occur in bunches, and have been mistaken for cauliflower excrescence. The sooner these are removed the better, and when their true nature is satisfactorily ascertained, they must be treated as primary disease, although, as in Reynolds's case, no trace of preceding chancre can be detected.

Maher, aged twenty-two, was delivered of her first child on the 23rd of April, towards the end of the eighth month—small, dead and putrid, which she had not felt for two months before delivery. The vulva was fringed, as you perceive, with condylomatous excrescences—some round the anus and in the fold of the nates. States that she suffered much from scalding and itching, and that these symptoms, with the growth of the condylomata, have been going on since shortly after her marriage ten months since.

The condylomata were removed by nitric acid and mercurial treatment directed, under which she speedily recovered; but her subsequent history is not known. Through which parent was her child poisoned, and was the poison contained in the original ovule, or conveyed through the maternal circulation? The duration of the intra-uterine growth is in favour of the probability of the latter.

M'Manus, a married woman, aged twenty-two, contracted syphilis from her husband, and presented herself suffering from the tuberculous growths or condylomata, springing generally from the nymphæ, fossa navicularis, and verge of the meatus. She had had a primary sore, followed by papular eruption, and taken some mercury. The poisoning occurred four months before this drawing was taken by Kirwan. The growths were destroyed by nitric acid, and she was treated constitutionally by alternating courses of mercury and hydriodate of potass, and recovered speedily.

Bubo, from whatever cause, does not appear to me to be so frequently met with in the female as in the male. It occurs, however, and runs riot, occasionally passing into phagedenic slough, with loss of substance, and spreads deeply into the groins, and all round the mons veneris. You have in this rude little sketch an instance of this kind occurring in a married woman, infected by her husband. She was a wretched, half-starved creature, and drank freely. The first intimation this woman had of her being diseased was the occurrence of buboes, which ran their course rapidly. I did not see her until she was in the state here represented. Fortunately she escaped hæmorrhage, and recovered, but with a rosy indurated cicatrix, isolating the mons and rendering it anything but worthy of its name.

It will naturally be expected that we cannot turn from the subject of syphilis without touching upon its hereditary character.

Strange to say, Hunter denied its being hereditary. The result of my own observations upon this subject I shall, for brevity's sake, give in the axiomatic form, claiming no authority for them beyond my own opinion, and admitting that several of the conclusions arrived at are still questions of dispute.

I have, then, satisfied myself that syphilis is *par excellence* an hereditary disease.

That it descends from the father and the mother through the tainted or poisoned ovum in both.

That its transmission through the circulation of the mother by taint in the course of the development of the foetus is possible.

That it may be transmitted in the secondary and tertiary stages, not in the primary, unless contracted *in transitu* at birth.

That it may be transmitted in these stages by either parent without the contamination of the other.

That it may be transmitted when the disease, although latent, evinces no evidence of its existence beyond the taint in the germ.

That there is a tendency in time for the taint to wear out, or the poison to become weaker in both parents.

That the life of the foetus and the period of gestation become prolonged from month to month in succeeding gestations, until at length a living child may be born, perhaps in the eighth or ninth pregnancy. In such cases the poison is usually latent in the parent.

That syphilis is an occasional cause of barrenness in both parents, but more markedly in the male.

That generally it is not productive of interruptions to impregnation.

That the disease is under the influence of treatment in both parents.

That the proper time for treatment is before impregnation, and sufficiently long before to allow of the eradication of the poison, and a complete recuperative action being established and confirmed in the system.

That mercury, properly and sufficiently administered, followed by iodides and other alteratives, can eradicate the poison in one or both parents.

That its administration, to afford the greatest security, ought to be extended to both, although evidence of the poison be perceptible only in one.

That as the effect of mercurial treatment is so disappointing when administered to the female, in the progress of pregnancy, it should not then be had recourse to, unless the state of the mother herself demands it; as, for instance, on the occurrence of a primary chancre, or of urgent secondary symptoms.

The effect of the syphilitic poison upon the fœtus may cause its blight or death at any time from two months' to nine months' growth. The most frequent period for throwing off the syphilitic dead and putrid child is about the sixth, seventh, or eighth month—the motion and other evidences of vitality having ceased a month before.

The evidences of syphilis, exhibited by the ovum and fœtus, are, in the early miscarriages, what we know as blighted degeneration of the ovum. The membranes and structures presenting a mass of gelatinous infiltrated clot, and the fœtus either representing a shrivelled, old-man appearance, such as we see in a fœtus suspended for some years in a bottle of spirit, or, more commonly, exhibiting what are known as putrescent appearances, i.e., the body bloated, of deep purple colour, the skin desquamating with infiltrated bloody serum interposed.

Where the child, tainted with syphilis, is born alive, it may exhibit congenital evidences of the poison, or these may occur at varying intervals afterwards.

Their most frequent period of occurrence are from a few days to a few weeks after birth; and, although they present themselves at later periods, the cases are much more rare.

There can be no doubt that more tardy developments of syphilis are observed traceable to congenital poisoning; and, although latent for years, eventually coming out in secondary and tertiary forms. These tardy cases, however, are very rare indeed.

The symptoms that most frequently occur in subcongenital syphilis are—nasal obstructions, fissures and ulcerations in the verge of the natural orifices, emaciation, insomnia, cachexia, sooty skin,<sup>a</sup> psoriasis. The internal lesions are syphilitic degeneration of the liver, with consolidation, and gray and purplish blotches, enlargement and consolidation of the spleen, hydrocephalus, crescentic fractures of the front teeth, and synechiæ, with iritic deformities, and chronic interstitial keratitis also occasionally occur. When we superadd to these syphilitic pemphigus, mucous patches, papular, vesicular, and pustular syphilides, ecthyma, impetigo, roseola, and the variety of affections of the internal skin, we may have enumerated enough for our present purpose, but not half of the multiform syphilides to which the miserable subject of congenital poisoning is obnoxious.

The proportion of cases of recovery from connate syphilides is very small, indeed. They generally appear doomed from their birth,<sup>b</sup> wanting what the French term "*viabilité*," and their existence is usually numbered by days or hours. With those attacked subsequently it is different, and

<sup>a</sup> See Lancereaux, vol. ii., p. 176. *Nouveau Clin. Med. Paris.* 1862. P. 665.

<sup>b</sup> See Pick. *Schmidts Jahresh.*, t. cxx., p. 194. Lancereaux. *Treat. Syph.*, vol. ii., p. 204.



the poison can, in most, be eradicated, especially when the internal organs are not engaged. The cutaneous and mucous structures are those principally attacked. The frequency of syphilitic poisoning occurring after parental engagement is supposed to be such that Diday and others recommend that the child of tainted parents be invariably treated with mercury after birth, as a preventive. This practice is not likely to find general favour, as mercurial treatment in infants is not free from danger, and it is quite soon enough to have recourse to it when evidence of syphilitic poisoning evinces itself.

The sheet-anchor in congenital taint, as in syphilis generally, is mercury; but its alternation with iodide of potassium and sodium, and ioduret of iron will be requisite; and, when mercury cannot be borne, or is clearly inadmissible, then the latter medicines must be relied upon exclusively. The external use, by inunction, is necessary in all cases; and either gray powder or the bichloride, in very minute doses, will be the preparations best borne internally. Cod liver oil is a great adjuvant in these cases. It is only loss of time attempting to administer mercury through the milk of the nurse or that of animals submitted to its influence. Teligot's experiments set this question at rest upwards of thirty years since.

Where the mother, from her own state, requires to undergo mercurial treatment, as she generally does, if her child evinces evidences of poisoning, at or after birth, the mother's milk might be given; but I confess I feel more confidence in the milk of a fresh, untainted wet-nurse, the more especially when, at all events, mercury must be administered directly to the child. The milk should, in case of vicarious nursing, be extracted artificially from the nurse, and administered to the infant through a sucking bottle, as nothing, in my mind, justifies the application of a tainted child to the breast of a healthy nurse.

The duration of the mercurial treatment must be guided by the symptoms and progress of the case. The iodides and iron, with combinations of phosphorus, may be required to be persisted in or returned to for a much longer time, and, in cases where the liver, spleen, and other internal organs are engaged, must be our chief reliance.

*Sensitive Papillæ and Warts.*—I have now to call your attention to a class of growths infesting the female organs, little understood, yet productive of great inconvenience and suffering. I speak of warts.

We have exhibited cases of syphilitic tubercles, warts, and condylomata. It remains to draw attention to those unconnected with syphilitic taint.

The growths spring from the vulva, the internal lips, the nymphæ, the verge of the meatus, along its course, the fossa navicularis, the interior of the vagina, and the os uteri. But they present somewhat distinctive

**C**haracters according to their habitat. On the external labia they are similar to those generally met on the exposed skin; on their interior they are softer and more mucous in their character; but those springing from the nymphæ and verge of the vaginal orifice are those pestilent growths to which I wish to draw your especial attention, from the amount of suffering they cause, as well as from the difficulty attending their detection and removal.

They occur as well in the virgin as in the married female, and, insignificant as they appear, constitute one of the most distressing diseases of these organs. Those on the nymphæ and interior of vagina and labia are usually so very minute as scarcely to be sensible to the touch of the examiner, and often not perceptible to view without the aid of a magnifying glass—at the same time, that they are acutely sensitive, and cause the greatest suffering when pressed. They are usually grouped in spots, but occasionally isolated, and are so little different in colour and texture from the surface of the skin, that but for their tenderness and the use of the magnifier they would escape notice. I have attempted to delineate them in this sketch as they appear, and, as I doubt whether it is possible for you to detect them at night with the assistance of artificial light, I send round magnifying glasses to enable you to do so. You will observe that those on the lower part of the left nymphæ are red; those above on the same side are white—this difference appearing to depend solely upon the degree of vascularity. The lower group appear abraded, and passing into ulceration—the effect of friction applied to relieve the intolerable itching attending them. We have a pseudo-wart or fungoid growth, generally larger in size than those described, springing from these organs, traceable as the result of unhealthy inflammation occurring in them. The most frequent causes are pressure and lesions in labour and afterwards. The consequent ulcerations heal, leaving hypertrophied granulations imperfectly organized, which project beyond the healthy skin, remain vascular, devoid of a true epithelial coat, sensitive often to a degree, and easily excoriated.

You have such a case in this drawing—the result of a tedious labour. The treatment in these cases is the use of the scissors followed by solid nitrate of silver and a compress, or, if so large and vascular as to cause hæmorrhage, the throwing a silken ligature round them. When they are grouped, and extend over a large surface, the application of glacial acetic acid is the most effective treatment; but when this becomes necessary over any extent of surface, the pain is so distressing that, if chloroform be not prohibited, it should be administered. This is the more necessary, as if any portion of them be left undestroyed, little relief is gained by the treatment. Those described are not, strictly speaking, warty germinations, but rather hypertrophy of the sensient papillæ.

When these growths extend into the vagina, they are generally larger, spread over a considerable surface, and are of a deeper red colour. They are not so intensely sensible, nor are they exposed to friction, and consequently cause less distress in this position. In married females, however, they are productive of such suffering, and grow so often again and again, after their removal, as to render the married state a life of misery, and even to interrupt or prevent cohabitation. The free use of the glacial acetic acid, followed by citrine ointment, frequent repeated cold ablution, and the wearing an elastic vaginal bougie, smeared with an ointment containing tannic acid and extract of belladonna, for several hours each day, will generally eradicate the sensitive warts, but even with this we must expect their return. No wine should be allowed to these cases, as it not only aggravates the suffering, but re-produces the disease.

We are not to confound these cases with those, occasionally met with, of intolerance of coitus in newly married females. In the latter the sensibility is general over the organs—not, as in the warty growths, confined to the particular points of their growth. The inconvenience caused by touching the wart is one of intense pain—that of touching the other, one of intense sensibility, attended with an uncontrollable horror or aversion, and, if persisted in, produces a species of convulsive revulsion, passing for the moment more into a hysterical paroxysm or mania. In the latter there is not merely an uncontrollable morbid sensibility of the organs themselves, but there is combined with it, in extreme cases, a perverted moral or mental sympathy, which would appear to deprive the sufferer of the control of her reasoning faculty for the moment. Opium, chloroform, and the use of a wax or gum-elastic bougie, with belladonna ointment, will generally prove sufficient for these cases. But occasionally they are very obstinate. I recollect one case being brought to me, in which this morbid state of aversion continued for nearly three years. The patience of the young husband, who was much attached to his “maiden wife,” an attractive young lady of 22, was at length exhausted, and legal proceedings for separation were instituted. The steady use of the bougie by an intelligent nursetender, assisted by the nightly administration of full opiates for some time, cured the intolerance, and relieved Sir Cresswell Cresswell from the after treatment of this case.

The growths met with in the meatus and in the course of the urethra partake more of the character of the true wart, and are usually large enough to be easily detected by the naked eye, springing, as you see in this drawing, from the margin of the urethra, just within the meatus, and projecting externally. Some of them assume the raspberry growth, but, when placed under the microscope, exhibit the appearance of numerous separate vegetations springing from the same base. The scissors, followed by nitrate of silver, nitrate of mercury, or nitric acid, is the simplest treatment for these also, when within view and reach; but as

some of them extend up into the urethra, or spring from points pretty high up in the canal, we cannot accomplish their removal in this manner. I have been in the habit of dealing with them by passing up solid nitrate of silver or chloride of zinc paste in this catheter caché, which projects from its shield tube on reaching the point engaged. The position of the wart is indicated by the slight resistance and bleeding on reaching it, and often easily detected by the intense tenderness on pressing the spot of the urethra engaged from within the vagina. When the wart sloughs, and the cicatrix is healing, and afterwards, a full-sized catheter should be passed to prevent constriction: and this, whether the growth removed be at the meatus or higher up.

*Scrofula.*—In my paper published in 1856, I alluded to the occurrence of scrofulous ulcers of the uterus as not infrequent, and drew attention to them, to some extent. Our design of now treating the specific ulcers and inflammations as a class would be incomplete without dealing with them. The strumous habit, whether hereditary or incurred by imperfect nutrition, and other depraving influences, is characterized by general and local symptoms. Its occurrence in the lower classes is sufficiently explained by want, exposure, and unhealthy atmosphere—especially crowding. In the upper classes its hereditary types are also frequently met with, whilst it is an induced or sporadic disease in them; and, although, like the poorer classes, it may be traced to imperfect nutrition, the inanition depends often upon a cause directly the reverse, namely, upon an excess, or inappropriate supply of food of a too stimulating quality, starving them in the midst of plenty by thus overloading and over-stimulating the digestive organs, over-taxing their powers, and inducing such derangement as unfits them for the healthy exercise of their functions. This causes a failure in the assimilating powers, as injurious to healthy growth and development, as occurs when food of a wholesome and natural quantity and character is withheld.

The great mortality of children from this disease proves it to be one of growth or development. But, although a large proportion of those who have (from whatever cause) incurred the specific habit known as the strumous, survive childhood, they carry with them through life a latent enemy, a pervading evil influence, permeating every tissue in their body, which watches to take them at a disadvantage the moment the circumstances or condition of the possessed individual afford an opportunity.

Although in infancy and childhood diseases of the female organs do not attract much attention, yet every practitioner is familiar with an unhealthy inflammation of the inner surface of the labia, spreading over the nymphæ and hymen, and into the vagina of children of strumous

habit. Neither does it necessarily depend, as is generally supposed, upon neglect or want of cleanliness. I have seen it repeatedly occur in children of the upper ranks, most assiduously cared for. Warty growths, as we have seen, occasionally occur at these early periods. As a rule, however, the female organs are comparatively free from disease until the occurrence of puberty. [I have elsewhere dwelt upon the manifold causes in operation in determining the selection of diseased actions to the female organs from the period of puberty throughout the after stages of life, and shall, with your permission, reproduce a brief quotation from myself, written in 1856, on this subject. In treating of congestion of the uterus:—"In inquiring into the causes of this disease, let us reflect what an important part is performed in the female by the organs peculiar to her. The extensive sympathies they evince, particularly with the cutaneous textures, and their liabilities, as partaking of serous, mucous, and parenchymatous structures, to the diseases of all of these. Let us further bear in mind the extraordinary changes and alterations in both structure and function, which they undergo in the different states of childhood, puberty, parturition, menstruation, &c., and their modifications and interruptions, and then the comparative frequency of disease in these organs is not to be wondered at. On the contrary, that the periodicity of their functional operations, regulated by no appreciable controlling power, yet recurring at such intervals, should not, more frequently, be interrupted, is rather a matter of surprise. That interruptions and alterations of their functions should be productive of lesions, or occur consequent upon organic changes, is what we should naturally anticipate. The great object of the physician should be to ascertain as far as possible the relations in which such alterations stand to each other as to cause and effect, this knowledge being of vital importance with a view to rational treatment."

The remarkable change that occurs in the female at puberty, by which mind and body undergo a transition or mutation in function and organization, so strange as to baffle description, causes a great strain upon the recuperative powers, and especially upon the nutritive or assimilating system. It is in the animal, as in the political economy, that the supply and demand must bear their due relations.

The animal economy, we have thus seen, is disturbed in a cognate ratio, when the supply is deficient, as well as when it is in excess, or, what comes to the same thing, inappropriate. That this state should occur in the young female, in the transition state from childhood to puberty, when a marked disturbance occurs in every tissue of her economy, we can well understand; and, that the consequence of this disturbance, the calling out the scrofulous diathesis, should be the result, is equally obvious from what has preceded.

That the organs that, *par excellence*, now undergo changes characteristic of womanhood should be especially liable to disturbance, both in function and structure, we should naturally conclude; and so it is. The uterus, which had hitherto acted no part in the economy, and might pass for a mere rudimentary structure, becomes an important secreting, or rather excretory gland or organ, charged with a periodic function, any interruption occurring in which disturbs the whole female economy. The very periodicity of this glandular action, with long intervals of inaction, would appear to add to its liability to interruption. We must not forget that this interrupted action may depend upon, or may cause, structural alterations, now that the excretory action of the uterus is essential to the health of the girl, in her transition and her womanhood; the excretion, whilst it causes a waste, affording also a periodical relief to the circulating and assimilating systems. We thus understand the influence of the puberal state in calling out scrofula, and equally the influence of the scrofulous diathesis in causing anemia, amenorrhoea, anorexia, and their attendant evils.

In the prolongation of the puberal nîsus, then, scrofula is a common occurrence. The phases in which it shows itself most frequently are tubercles in the lungs, inflammation and enlargement of the glands, more frequently the cervical, the thymus, tonsillar, palpebral, and mesenteric glands, conjunctiva, ulcerations in the nose and lips, thickening of the latter, inflammation of the joints, herpes, &c.

The general condition of the body sympathizes, as a matter of course, with these local affections, independent of the influence produced directly by the defect in nutrition, and hence attenuation, wasting of the tissues, this added to by the deficit occurring at the very period of life when the rapid increase in growth demands that the secretants should be more active than the excretants.

The tendency to elongation in the bony structures appears to predominate, and we often observe that the growth in height increases rapidly, whilst the development in all other respects is defective. In some remarkable cases, however, this does not hold, and the failure in upward growth also occurs, and continues until the period of growth-life has passed, when the subjects are stunted dwarfs for life. The balance that holds generally in the relative development of the structures is in other respects disturbed, especially in the period of growth-life. We have seen that the bony structures develop plus, the muscles generally minus; and yet I have met with cases in which the muscular power in patients steeped in scrofula was incredible.

The same variety holds, but much more rarely, in the adipose tissues, and, although very rarely, I have met with excessive adipose deposit in scrofulous persons.

The circulating system is almost invariably at fault. The circulation languid, the red particles of blood wanting, anemia, respiration laboured on exertion, langour and listlessness, are the usual accompaniments.

When a florid complexion occurs in a markedly scrofulous habit, which is very rarely the case, it depends either upon local congestion in a very transparent skin, or possibly from stimulating food, with cutaneous determination, or from the disease, with its organic complications, having arrived at the hectic stage.

The nervous and mental indications or complications may be described under the term legion, including epilepsy-convulsions in all varieties, hysteria in its physical and mental morbid actions, temper disease, or, as Dr. Lasègue, who has most accurately described it under a new name, terms it, hysterical anorexia.

To us, in our more favoured country, these varied phases of strumous diathesis offer themselves in sporadic or, at most, family groups. It is not so in other countries. In Switzerland, Prussia, Germany, Poland, and elsewhere, it is a constantly existing endemic disease, perpetuated by local atmospheres, *non-naturals*, and other external influences, as well as by hereditary taint, in whole districts of country, and numbering its victims by millions. Strange to say, little has yet been done in any attempt to remedy this opprobrious endemic in *this* our nineteenth century, boasting, as we do, of our progress—weighing the planets with a balance, measuring and navigating the atmosphere, exploring the depths of the ocean, and circling the earth with a tell-tale wire, which conveys the scandals of one hemisphere to another placed at the antipodes as quick as they can be uttered—we look with complacency at millions of our fellow-creatures dragging through a miserable existence, many of them little removed from the beast that perisheth, many of them unequal to duties of the beast of burden, and too disgusting to excite our pity or sympathy; their only functions, occupations, and motives for existence apparently, to consume food, digest it, and secure the reproduction of millions of creatures like themselves; their beauty consisting in the size of their goitre, and their mental superiority in the harmlessness of their disposition. When we consider that all this misery is *preventable*, if not curable, that proper laws of hygiene, if carried out, might, in the course of two or, at most, three generations, put an end to all this misery and bestial deterioration of millions of our fellow-creatures, we may well exclaim, in the language of the prophets, “How long!”

In tracing the strumous habit to defective nutrition, it would be wrong to omit the influence, in its hereditary development, produced by the practice of confining the reproduction to the same stock. This is a practice that breeders in domestic animals always avoid, and the ill effects of which (notwithstanding the denial of Erichsen and others) most gynecologists are familiar with. Now, without going with Darwin

so far as to attempt to explain the process of evolution by purely physical causation, independent of the existence of a guiding intelligence. I am quite satisfied that it is within the capacity, and consonant with the design of the creation, that all organisms, as Darwin asserts, should be variable. The views of Professor Cope and Murphy appear to support this idea, and Agassiz' opinions on the early development of character in the species strengthen it. But this variability is a part of that original design stamped upon them. Now, if we carry that idea a little further, and accept these variations, not merely as accidental occurrences taking place, as Mivart, supported by Professor Murphy, in his rough calculation suggests, at intervals, varying from thousands to millions of years, but as constant in their occurrence and as necessary to secure organic progression—if we accept it as a general law, applicable to the highest as well as the lowest grades, operating in the most perfectly developed specimen of the creation, man, as in the primary protoplasm of the lowest organized entity in the creation, *that all organizations are not merely variable but varying*, and that this law is established not merely for the purposes of evolution, *but for the sustentation in their healthy and normal state of the endowments, capacities, and organizations* of the genus, as well as for their highest development and conditions in the species, we may then even admit selection as part of our belief in the laws of nature, without infringing upon either the dicta of Paley or the creative jurisdiction and design of the Deity.

In the vegetable kingdom the law of selection is as remarkable as in the animal kingdom. Witness the pains taken and the designs planned for affording opportunities for stimulating, as it is termed, the plant into a healthy vigour and variety, in its reproductive growth, by the application of pollen from a new stock.

The recent discoveries of Professor Burdon Sanderson,\* respecting the electrical phenomena which accompany the irritation of certain leaves, and similar to those which occur in the animal muscle, throws an additional light upon the analogy existing between the two kingdoms, and renders it not unlikely that the contractile or sensitive substance, both in muscle and vegetable tissues, may eventually prove to be protoplasm. The principal difference observed being the time required for the restitution of its irritability after exhaustion—the period of latent stimulation being only one-hundredth of a second in a muscle, whereas it is one-third in a plant.

There can scarcely be any principle in physiology more satisfactorily established, in my mind, than that of hereditary selection, a principle as conclusively proved by affirmative facts as by negative results.

If the investigation of the natural laws that govern life justify our adoption of the theory of evolution, as appears to be the case, and if

\* See Proceedings of Royal Society, 20th November, 1873.—*Times*, Nov. 22nd.



selection or variation to this extent be further admitted, that no two leaves or faces are exactly alike but varying, that these variations extend throughout all organized structures in their growth and renewal, and are productive of power and vital force in the possessor, and perpetuated by hereditary influence—if we further believe that, although wearing out in the individual, as must be the case in any machine with or without vital power, as so well explained and insisted upon by Professor Owen, and that the vigour and vitality of the germ is secured by separation from the parent stock, whilst possessing its vital energy in the highest degree—if, I say, we admit these conclusions as fairly arrived at by observation and reasoning, then I cannot see how we can limit these vital laws to arbitrary periods, but must, on the contrary, grant their ever-presence and constant operation in organic structures.

Physiologists have long sought for a definition of life, but, so far, have only arrived at a variation in terms of the expression of the word itself. Thus vitality, vital action, the presence of those powers and functions that resist death, or denominations selected from some of its obvious effects, *vis medicatrix nature*, recuperative power, and so forth. To these we may now surely add evolution, organic progression, or, perhaps, even natural selection; especially if this latter phrase be accepted, as an endowment implanted by the Creator in the plastic or gelatinous protoplasm, exactly as the function of thought is in the brain, or its special secretive and selecting capacity is in every gland of the organized body.

There is nothing incompatible with the existence of a universal guiding intelligence in supposing that the Great Designer had delegated a power of selection to one organic structure more than to another, to the germinal vesicle more than to the brain, or the liver; but, on the contrary, in my humble opinion, the very power to delegate the selective capacity exhibits omnipotence in a manner as comprehensive as the perfection of universal design exhibits omniscience.

This view of natural selection only extends the chain up, as the Christian examiner of Cambridge so admirably expressed it in his criticism upon Lawrence—one link higher. Lawrence had repeatedly used the word organization, as an accepted term, much as the philosophers of the present day do causation, evolution, and natural selection. The advocate accepted the term—and simply analysed it—by stating that an organization, or organ, implied an *organist*, adding that the philosopher had traced the links of the chain, but that the point of suspension was beyond his reach.

The negative results, or the effects observable from neglect of attention to hereditary selection, are especially so in scrofula, which we have already traced, when sporadic, to defective nutrition. The instances usually adduced as illustrative of the descent of what is termed a

favourable variation to the offspring, are those modifications of structure which enabled the parent to survive in the competition for life. What structural endowment can be more calculated to effect this object than power of selection, so as to secure organic progression, and the consequent development of the *corpus sanum* in its most perfect state in man, the masterpiece of organic creation? If then, as asserted as well by Darwin as his opponents, there exists a law of variable, or, as I venture to mention, of a varying organization, essential to organic progression, and, if man has arrived at the highest stage of this progression, it is no straining the proposition to affirm that *the operation of that law continues now, as it has ever done, at least in the sustentation of the progress it has attained.* If it ceased to operate, in this respect, as far as the laws implanted in it permit, the natural result to be anticipated would be retrograde action, and the consequent hereditary development of a deteriorated being, when the means of securing progression, *i.e.*, selection, were disregarded.

And this is exactly what occurs in the development of hereditary struma, depending upon the causes alluded to. The manner in which the scrofulous deterioration evinces itself, although most apparent in the nutritive system, is not confined to it, nor are its ravages limited to mere defect of nutrition. Although anemia is its most constant accompaniment, lesions depending upon a want of balance in the vital orgasms, is very common. Hence morbid actions and degenerations of various kinds occur.

If this reasoning be admitted to hold in scrofula, as accounting for the degenerations and morbid actions observed to occur in that protean malady: it is not impossible that further light might be thrown on the *causæ morborum* in some other diathetic or constitutional diseases, more especially in those ascribed to habits of body, or blood poisoning, as syphilis, gout, between the former and which we have seen a remarkable resemblance, is observable. It is not merely from the neglect of hereditary selection, but from a hundred and one other causes, many of them occult, and others obvious enough, although disregarded, that the deterioration and decay of the vital powers occur. Their consideration would lead us into too wide a field did we merely attempt their enumeration at present.

To return, however, to our more immediate subject: the strumous affections of the uterine structures. The ovary would appear to evince this disease by acute and chronic inflammations, resulting in effusion of plastic lymph into its structures, causing permanent enlargement and distress in them, and passing, though rarely, into purulent depôts, which may point into the cavities, or externally, or cause hydatid degeneration and dropsy of one or more of these cysts. The Fallopian tubes, and the ligaments, may be originally engaged, or become implicated with the ovary. The termination by pelvic abscess, which is a not infrequent

result of inflammation in the broad ligaments, is a very tedious, distressing, and fatal affection, and has occurred, in most of the cases in which I have met with it, in persons of strumous diathesis.

In the early or acute stage of this affection, two or three leeches applied internally to the neck of the uterus on the affected side, at repeated intervals, mild mercurial alteratives, as Plummer's pill, and James's powder, counter-irritation, and blistering in the iliac region, will afford the best means of checking the disease. If these fail, I should, by all means, recommend the insertion of a cord seton, as our sheet anchor in the way of local treatment. Constitutional treatment, as change of air, light healthy nourishment, followed by cod liver oil and very mild tonics, with a very moderate amount of stimulants, must be had recourse to. Notwithstanding this treatment, the disease, especially in markedly scrofulous habits, will baffle our efforts. The strumous inflammation will extend to the bladder and rectum, adding to the patients torture. Abscesses may open into the vagina, the labia, or groin, or openings made by the surgeon may facilitate the escape of matters. If these be neglected or impracticable, then the openings may take place into the bladder, the peritoneum, or the rectum. The two former proving generally fatal, whilst the latter affords the best alternative in these miserable cases.

A case of scrofulous pelvic abscess was some months since under my care, in which, although the matter was discharged through an aperture which I cut in the wall of the vagina, yet the inflammation and ulceration extended to the bladder, causing great torture, and terminating fatally. I may mention a case which, although not occurring in a person giving any scrofulous indication, is at present under my care—a barren married lady, about sixty years of age, with solid tumour projecting from the neck of the uterus down into the vagina of several years growth and of calcareous hardness, filling up the pelvis, and perceptible on pressure over the pubes. A copious sero-purulent discharge has been flowing from an opening close to the os uteri in this case, which saturates two napkins in the twenty-four hours, and continues apparently secreted from day to day. This case was attended throughout its growth and development with little pain, no wasting, the inconvenience being mechanical. But the pointing and discharge are attended with some fever of a hectic character, great prostration, and copious night sweats, and this train of symptoms has placed her in great jeopardy, which, indeed, continues at this moment.

We should not anticipate that the uterus would be liable to the occurrence of abrasions and ulcerations until after impregnation and child-bearing, when lesions so commonly occur from the distension and subsequent involution of this organ. Such a conclusion, however, is not borne out by observation, as these do occur in the virgin uterus, although not so frequently.

There is no doubt that their occurrence is more observable in the female of strumous habits than others, and, indeed, so markedly is this the case in my observation, that I look upon most of the cases I have met with in the virgin as due to scrofula. I exhibit here a drawing of the appearance exhibited in a virgin os uteri affected with scrofulous ulceration.

You will observe that the uterus gives the idea of more than virgin dimensions, the effect of long-continued irritation.

In a paper on Benign Inflammation and Ulceration of the Uterus, I drew attention to the facts—"that the genito-urinary mucous membrane is markedly liable to catarrhal affections from cold or other causes, determining to mucous membranes, such as the susceptible structure is disposed to (especially in those of strumous diathesis). Thus, as we see in some, a liability to nasal, and in others to bronchial, or gastric mucitis, so in many females there exists a strong disposition to its occurrence in the uterus or vagina. Catarrh in the uterus is much more obstinate than this affection in the vagina, and the inflammation in the latter mucous membrane more tedious in resolving itself than that occurring in the nymphæ and vulva. Thus the deeper the seat of the disease the more difficult to cure—a fact which is observed to occur independent of the difficulty attending the treatment. The same observation applies in the male (see Acton on Ven. Dis., p. 47), the inflammation of the prepuce and glans penis being much more under control than that of the urethra or throat."

As examination with the speculum is out of the question, unless under very urgent circumstances, in the virgin, it is of importance that we should be able to diagnose the occurrence of these lesions by local and general symptoms independent of it. The former are leucorrhœal discharge, generally very slight, sense of heat and uneasiness in the course of vagina and external organs, lumbar pains, lassitude, sympathetic neuralgia, most frequently in the iliac region; worn expression of countenance, with pallor, in fair complexions; and dingy, as if rubbed in with a dirty brush, in sallow or dark complexions. The leucorrhœa is often denied, or has not attracted notice until attention is called to it.

When these symptoms occur there can be little doubt of the nature of the case, and that local treatment is as necessary as general. Menstrual molimina may co-exist, and then the symptoms of chlorosis will develop themselves. In some cases, on the contrary, menorrhagia may occur, when there is reason to apprehend that the lesion has extended to the interior of the neck and body of the uterus.

In the cases where the disease is confined to the vagina and os uteri, injections of acetate of lead, three grains to the ounce, alternated with nitrate of copper, of the same strength, will generally suffice to heal them; but if these fail, and the symptoms continue, accompanied by hæmorrhage, with evidence of increased constitutional engagement, and endo-metritis

evidently co-exists, then, particularly where the strumous diathesis is present, a very small speculum must be introduced and the case treated with or without previous dilatation of the neck, as may be necessary. The local treatment by caustics, alteratives, and even local depletion, with the lancet or leech to relieve congestion, may be necessary. But unless chronic metritis co-exist, the latter is very rarely necessary in the virgin.

These scrofulous ulcerations are very slow in healing, and apt to recur. They can rarely be healed without strict attention to the constitutional health, whilst under treatment. Cod-liver oil, iodide of iron, steel more freely when amenorrhœa is present, nutritive food, but not in excess, change of air to the sea-side especially, and very sparse administration of stimulants, will be the necessary treatment. The scrofulous lesions in the married females are by no means unfrequent, and when we consider the prevalence of the pre-disposing, and the frequency of the exciting causes, this is not to be wondered at. We have already seen that *under* and *over* feeding equally pre-dispose to struma. If we superadd the frequency with which lesions are induced, by the distension of the pregnant uterus, followed by its involution—the abrasions, contusions, and loss of continuity, in its structures, more especially in the neck and os—it is not to be wondered that these lesions occur *frequently*, but rather that they should not occur *always*.

Add to this the frequency with which sub-involution, or imperfect contraction and absorption of this organ occurs, as the result of labours, and we need not wonder that the lesions alluded to should pass into ulceration, and that these ulcers occurring in strumous habits should assume specific characters, and demand special treatment.

In almost all the scrofulous inflammations and ulcerations of the uterus I have met with, the uterus was found much larger than it should be in the unimpregnated state. This enlargement in the more acute cases depended upon inflammation—whilst in the more chronic it was the result of congestion or sub-involution.

I here exhibit a drawing of a scrofulous ulcer engaging the os in a patient, forty years of age, her youngest child six years old. This lady had scrofulous cicatrices in the neck, enlarged inguinal glands, phthisis in her family, and all the characteristics and history of an hereditary strumous diathesis. There was a copious leucorrhœa, which had continued for many months, and to which she attached no importance; her reason for consulting me being a sense of bearing down, attended with uncomfortable sensations in the bladder and rectum. On examination the uterus was found enlarged to upwards of three times its natural size; the fundus pressing back on the rectum, and the os forward against the bladder. The entire os was engaged in this ragged ulcer, into which the finger sunk on examination; the uterus felt condensed beyond the ulceration, and the whole organ rested low in the pelvis.

A hasty examination of such a case as this might have led to an erroneous diagnosis, and to it being pronounced malignant. The scrofulous symptoms were, fortunately, not overlooked, a promising prognosis given. Nitric acid was freely applied to the ulcer, followed by nit. silver, repeated scarifications. The introduction of a Hodges' pessary, to retain the uterus *in situ*, ioduret of iron and acid bitters given. Her constitutional symptoms treated by light nutritive diet, change to the sea-side, tepid salt water bathing, and, though last not least, the diminution of her allowance of stimulants, of which she had been induced to take a large quantity. Within three months the ulcer was perfectly healed, the uterus reduced to less than twice its natural volume, and the patient's constitutional health completely restored. In this case, which was under treatment three years since, the uterus never reduced to its normal size, nor was she able to get on without the pessary.

I cannot conclude this case, and with it the subject, without dwelling briefly upon the growing practice of administering stimulants too freely in these cases. A very considerable proportion of the cases presenting themselves, both in single and married women are induced to exceed in this respect, and the invariable answer to inquiries is, the doctor ordered them to take plenty of wine; and some even add brandy. My experience in the treatment of this, and most other diseases of females, coming under my notice is, that for one that requires stimulants and derives benefit from them, ten are injured by their use (many of them irreparably), and the others recover only when stimulants are desisted from.

When a physician prescribes wine, as he occasionally must, he should *explicitly* direct the exact quantity, and, if this quantity amount to more than is usual and right as a habit, he should limit strictly the time for which the increased quantity is to be continued, in order to prevent an excess of wine becoming a habit. A neglect of this precaution has, to my knowledge, led to the most deplorable consequences, and that in cases where, in the first instance, the smallest quantity of stimulant was taken with great reluctance, and only when insisted upon by the medical adviser,

## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

GEORGE H. KIDD, M.D., President.

R. W. SMITH, M.D., Secretary.

*Peritonitis in Enteric Fever.*—DR. A. W. FOOT exhibited the diseased intestines of two young persons who had died in the Meath Hospital of typhoid fever on the same day—one from peritonitis without perforation, the other from peritonitis with perforation. One was a boy of eighteen, who died in the fourth week of his fever, the other a girl of sixteen, who died in the fifth week, 31st day. In the boy, perforation took place; not so in the girl, but in her case hæmorrhage from the bowels had occurred, off and on, for ten days before death. The girl's fever was severe from the commencement, abdominal symptoms and high temperature were its predominant features; hæmorrhage occurred for the first time on the twenty-first day. On the day before there was a sudden fall to the lowest point observed during her illness, 98·6° F.; her temperature rose to 105° F. on the night the hæmorrhage occurred; it was preceded by delirium. The temperature and pulse continued to rise after this event; she became very deaf, and passed most of her time in a kind of languid stupor; on the 30th day three severe rigors, lasting about fifteen minutes each time, occurred at 7 a.m., 11 a.m., and 5 p.m. She complained of great abdominal pain before the first rigor; in the second the temperature rose to 107·2°; the pulse (160) could not be counted at the wrists owing to subsultus; her lower jaw chattered against the upper one, and she made a broken moan as she shivered. She had but the three attacks of rigor; she died thirty-six hours after the first one, without hæmorrhage, and very quietly.

During her illness fifty-one observations were made upon the temperature, the pulse, and the respiration respectively. The average temperature was 103·1° F.; the max. temp. 107·2° F.; the min. temp. 98·6°. (The observations were made twice daily, morning and evening. The average pulse was 116·5, the max. 160, the min. 92. The average rate of respiration was 31·7, the max. 72 (cerebral), the min. 21.

The body, examined sixteen hours after death, contained much fætid gas in the cavity of the peritoneum; the intestines were not inflated, but the lower convolutions of the ileum presented the irregular, lumpy, greenish-red, mottled swellings, so characteristic of the localities of typhoid ulcers. There was no inflammatory product at all on the

anterior wall of the abdomen; lying in the deeper parts of the pelvis was a considerable quantity of whey-coloured serum, with yellow flocculi and strings of lymph floating therein; and on the peritoneum behind the pubis and on the sides of the iliac fossæ was some inflammatory exudation; the lower and deeper coils of the intestine were more or less agglutinated. The paleness of the jejunum and upper parts of the ileum contrasted strongly with the colours of the diseased parts of the bowel. The ulcerations commenced in the lower half of the ileum and increased in number and size as they approached the ileo-cæcal valve, where they became confluent; the vermiform appendix was very long and swollen; numerous solitary ulcers were observed in the cæcum and ascending colon. On the outer side of the bowel the peritoneal coat at the parts corresponding to the sides of the larger and deeper ulcers was injected with arborescent capillaries, and in many places sheeted with reticulated lymph, but nowhere perforated. These points appeared to be the foci of the peritonitis, which was one propagated by irritation from within, without any extravasation of the contents of the intestinal canal. All the deeper ulcers had ochreous sloughs attached to the depressions in their bases. The spleen (weight  $5\frac{1}{2}$  ozs.) was light for its size; it was not emphysematous. The upper surface of the liver was discoloured superficially from contact with the gas which had been free in the cavity of the peritoneum; it had the dark, slaty-green colour usually presented only by the portions of its concave surface which have lain in contact with the colon. The other organs of the body presented no special anomaly.

The boy from whom the second set of specimens were taken had only been forty hours under observation. He applied at the hospital when in a state of collapse, with pinched, leaden-coloured face, pain in right iliac fossa, occasional vomiting, high temperature, and rapid pulse. He said he had been sick at home for three weeks with an illness which he attributed to wet feet. He had no diarrhoea or eruption, and from the history of the case it seemed that his illness must, until quite recently, have apparently been very slight. The lungs were perfectly healthy. There was a doughy tumidity of the whole abdomen; neither pain nor tenderness was a prominent symptom. He was delirious before he died. The temperature reached  $104.2^{\circ}$  F., and the pulse 170.

The body was examined nine hours after death, and, though very spare and badly nourished, retained a considerable amount of heat. It was found that perforation and extravasation of ochreous fæces had occurred in the ileum through an aperture of the size of the barrel of a large steel pen in the floor of an ulcer. So violent and general was the peritonitis that rupture of the several larger viscera was sought after as the cause before the intestinal ulcer was discovered. The abdomen of the corpse was very prominent and much distended; there was no



peritoneal tympany; the omentum and intestines were adherent to the anterior wall of the abdomen, through the medium of sheeted strata of yellow exudation fibrine. When these parts were raised, much bright yellow, ill-smelling, thin fluid appeared in the deeper parts of the abdominal cavity. There was great inflation of the small intestines from the commencement of the jejunum downwards for some distance, and rosy, subserous injection of the inflated bowel. The intestinal coils were agglutinated with flakes and drifts of yellow fibrine, which, wedged into the angular recesses of the convolutions, made them look as if yellow paint had been poured thickly over them. So densely coated was the left lobe of the liver that the gall bladder was suspected to have given way; but when it was discovered, it was found contracted, and its scanty contents did not exude on pressure. The stomach was whole and moderately contracted; besides, he had vomited much during life; the urinary bladder was contracted and unbroken. It was thought an empyema might have opened into the abdomen, but the pleuræ, when examined, were quite healthy, as also were the lungs. There was no abscess in the spleen or liver. An opening was then made in the commencement of the jejunum, and a gentle stream of water sent along the intestine; this was soon seen coming out through a circular aperture in the floor of an ulcer in the ileum; round the margins of the perforation, on the outer surface of the bowel, was a thick sheeting of lymph, which, however, had not proved sufficient to prevent rupture and extravasation. The ulcer had all the characters of a typhoid ulcer. Having suffered severely from the examination of recent cases of acute peritonitis, Dr. Foot did not think it advisable to make any more prolonged examination of the parts, being satisfied that the case had been one of latent typhoid fever, progressing insidiously up to the time of the occurrence of the most serious event that can complicate this dangerous disease.—*April 26, 1873.*

*Fatty Degeneration of the Heart.*—DR. NIXON exhibited some of the thoracic and abdominal viscera of a woman, aged forty-five, who, while under the care of his colleague, Dr. Cruise, for ulceration of the leg, was frightened by being told suddenly that her daughter had typhus fever. She was at once seized with tremors, which, with occasional subsultus, continued up to the time of her death. She became very stupid; there was paralysis of the tongue, and on the eleventh day she became convulsed, and died in two hours.

*Post-mortem examination.*—The left ventricle felt solid, and its cavity was diminished in size, but there existed, nevertheless, fatty degeneration of its muscular fibres, more especially in the vicinity of the coronary arteries, which, as well as the aorta, were atheromatous. The mitral orifice was contracted, and its valves were corrugated. The meningo-

rachidian venous plexus was distended with blood. Masses of calcareous matter had been deposited in the falx cerebri, and tentorium, as well as in the arteries forming the circle of Willis. There was a small aneurismal dilatation at the origin of the middle cerebral artery.

The liver had, to a certain extent, undergone fatty degeneration, and the spleen was large and soft. There was a large cyst connected with it, and a similar cyst was found in the left kidney.—*April 26, 1873.*

*Multilocular Ovarian Cystoid.*—DR. A. W. FOOT laid before the Society an ovarian tumour, which had been removed from the body of an unmarried female, aged forty-five. The woman died of acute peritonitis, thirty-four hours after tapping, apparently arising from extravasation of some of the contents of the incompletely emptied cyst. The disease involved the right ovary, and had been observed by the patient for about a year.

When admitted into the Meath Hospital, 8th April, 1873, the abdomen was globose, the shape unalterable by position, and due to the presence of a semi-solid tumour, which gave fluctuation in a circle round the umbilicus. The disease was first noticed as a "lump" of small size in the right iliac fossa, and in its earlier stages had been movable, but with pain. When admitted into hospital, she was suffering more from pain in the back and under the right scapula than from any other symptom; her general health was not materially impaired, nor had she acquired the "facies ovarina." The physical signs indicated the existence of one large cyst; the remainder of the mass was regarded either as solid matter, or as an aggregation of smaller, tense cysts. It was considered that a preliminary tapping should be performed before the removal of the tumour should be determined on. The fact of menstruation having ceased was considered favourable to the operation, the number of large veins spreading over the abdomen, unfavourable. The abdomen, at the time of operation, was thirty-six inches in girth at three inches above the umbilicus, and fifteen and a half inches from the xiphoid cartilage to the pubis. A basinful of brown, glutinous, inodorous matter was removed, slowly and with difficulty, through a large canula by a puncture of the large cyst made a little to the left of and below the umbilicus. She was tapped at ten a.m.; violent pain in the abdomen came on in the evening, and she died twenty-four hours after the commencement of the peritonitis. The abdomen of the corpse was much larger than it had been before the operation. The gas contained in the peritoneal cavity was set fire to as it escaped from a puncture in the parietes, and burned with a pale blue, very hot, detonating flame. The intestines were contracted and empty; the peritonitis was acute and general. The tumour had no adhesions whatever; the left ovary was of normal size and appearance. The various smaller cysts, unlimited in number, of which the harder part of the tumour consisted, contained matters of every

colour and degree of consistence, but all more or less glutinous. It seemed as if the long probe introduced through the canula to measure the cyst which was tapped, had penetrated the very soft walls of two of the secondary cysts, which projected into the interior of the large one. Parts of the thickest portion of the outside wall of the whole tumour, on section, were seen with the naked eye to be composed of numerous small pits or cellular recesses, like the cavities in a honeycomb, large enough to contain a hemp seed, and each excavation contained a clear, diaphanous, reddish jelly, tolerably consistent, and which could be pulled or pressed out, leaving the cell-wall stiff and uncollapsed.—*April 26, 1873.*

*An Introductory Address, delivered at the Ledwich School of Medicine, November 1st, 1873.* By ARTHUR WYNNE FOOT, M.D., Lecturer on Medicine in the School.

GENTLEMEN,—In coming before you to-day to deliver the opening lecture of the sixty-fourth session of medical work in this distinguished seat of learning, my first duty is to express, in the most public manner, my deep sense of the honour the proprietors of this School have conferred upon me in electing me as one of their teaching staff. I beg to assure both them and you, gentlemen, that I shall exert myself to the utmost to discharge the responsibilities of the department with which I have been entrusted, in such a way that I may not prove unworthy of the confidence that has been reposed in me, or untrue to the spirit of active progress endemic here. It is a source of great gratification to me, and of no small pride, to have become connected with such a centre of medical education as this is—to have become attached to a school which is a signal monument of private enterprise and industry, and which is one of the most successful nurseries of that medical talent for which this country is remarkable; a school which, having survived many vicissitudes of fortune, lived down much hostile opposition, and weathered many a trying storm, now flourishes healthily in the bracing air of generous competition and wholesome rivalry with kindred institutions.

It is also incumbent upon me to allude to the circumstances which have indirectly led to my appearing here to-day, and I proceed to do so with mingled feelings of pleasure and regret. One<sup>a</sup> of my able and accomplished predecessors has been transferred to a post of honour and distinction which he ornaments with the ability he displayed so conspicuously here. The other<sup>b</sup> lies secure from praise in the austere repose of the grave, prematurely removed by death, but not before he had endeared himself to many by eminently genial qualities, and had given numerous proofs of that zealous devotion to his duty, which was destined, had he been spared, sooner or later, to culminate in success. Both have left this place—one with a crown of laurel, the other with a wreath of cypress; the opposite fates of two with whom all here were intimately acquainted is calculated to remind you of the risks as well as the rewards of the profession you propose to follow.

Having performed the duties of returning thanks for my appointment,

<sup>a</sup> Dr. James Little, elected Professor of Medicine, Roy. Coll. Surg., Ireland, 3rd Dec., 1872.

<sup>b</sup> Dr. Henry Eames, *obit* 24th March, 1873.

giving promises of good behaviour, and paying an inadequate, but heartfelt, tribute of respect to my predecessors, I would willingly retire from the task of further addressing you. An opening address, in the present style of such things, is a species of literary performance difficult to conceive, tedious in delivery, and usually abortive in its results. There is generally some degree of curiosity among the more inexperienced portion of the audience as to what it will probably be like, and this feeling of expectancy slightly relieves the sensation of oppression which pervades the student mind at this period of the year when the air is thick with "introductories." The prevalent idea is that you will be exposed to a kind of medico-theological or medico-political discourse, which has to be listened to in sad civility for an unknown period of time. Perhaps this impression may have arisen from the lecturers on such occasions sometimes not sufficiently entering into the individual and personal difficulties of the student—not sufficiently identifying themselves with his interests, and not touching sympathetic cords. It seems to me that if these latter lines were followed on such occasions, there would not be so many to whom the usual subject matters of introductories have, by iteration and re-iteration, grown obsolete, wearisome, meaningless, and listened to only as the monotonous moaning wind, when there is nothing else to listen to. I intend to try, on this occasion, to engage your attention, and, perhaps, arouse your interest, not by essaying any subjects of great professional importance, but by planting a few strong germs of universal truth and easy application in your minds; and while I am not able to hold you spell-bound with the music of unfaltering eloquence, or keep your imaginations prisoners for the time with arts of rhetoric, I will plead for your attention only on the grounds of earnestness, and of a real desire for your individual and collective advancement.

It is not necessary for me to review the history of the rise and progress of this School, or dwell upon its now firmly established and universally admitted celebrity. This is patent to all, thanks to the exertions of many past and present eminent teachers and workers in all the branches of medical science. Honoured by association with them as a colleague, I trust that the recent changes will not expose its high reputation to any deterioration at my hands. I do not purpose to make use of you to-day as a mouth-piece for the public ear, nor shall I make this address an opportunity to stalk my politics upon your innocent shoulders. Nor do I intend to call up whole legions of learning, and try to parade in review before you any of the vast and varied speculations of expanding knowledge; such a course would, I conceive, be foreign to the purpose and occasion of this meeting—it would be to pour on tender plants just bedded out, the hard and pitiless hail of a thunderstorm, to bruise, and batter, and kill their rising hopes, instead of watering them with the encouraging moisture of a gentle dew.

I prefer to address myself to you as students—to touch upon your life and interests with its hopes and fears, its aims and objects, its difficulties and its comforts, its bright side and its dark side—and to you, and you alone, will I address myself to-day. I will commence by suggesting to you, as worthy of your adoption and incorporation into the essence of your daily life, the ideas of enthusiasm, industry, and earnestness of purpose, believing that these are principles on which the course of your whole future life will hinge. They are simple fundamental ideas which the first beginner here to-day can take hold of, and keep working like threads of gold into the web of his life as it issues from the loom of time, until by perseverance he stands a shining light in a vesture of professional perfection. They are principles which will hold good in all times and places, which will never have to be unlearned, and which will prove the only sound basis and substratum on which to build the hopes of success which I trust animate the breasts of every one about me.

I do not want to come before you as one giving advice, and merely advice; you would rightly ask what business had I to do so, who cannot speak to you as a leader, who am but a corporal in the ranks, and I hope an humble one. What pride I have is derived from a consciousness that I am a student like you, and I trust that I may never err so far from the right way as to forget for one moment that no real seeker after truth can ever cease to be anything else. I have heard a great deal of advice myself, some good, some indifferent, some decidedly bad; but the pith, and marrow, and summary of all the good advice I ever heard was this—that, above all things, the interest of our whole life depends upon our *diligence* now, in the golden season of our age, when time and youth and health combine to give us opportunity. I heard that *diligence* includes all the virtues a student can possess. I am convinced that statement is true—I feel it, I see it, I know it. I claim to be a disciple of that doctrine, I would aspire to be even an apostle of that faith; and can you blame me if I urge upon you, with the zeal of a missionary, what I have found to be the best for myself, when I have no motive at the bottom of my heart but a wish to see you prosperous and honourable members of a profession which holds out its supreme rewards to industrious and persevering merit. And I cannot but think that it is fit and proper, on this occasion, to bring such subjects before an audience which will surely be appreciative, before the gentlemen of a school of medicine which is notorious for the ardour of its students. I cannot but think that enthusiasm, industry, and earnestness of purpose, are watch-words which will find an echo here, and come home with force to the hearts of the painstaking men who work here by day and night in downright earnest, and while they may encourage those commencing their medical studies, this winter, to lay themselves out for work from the very first, they may stimulate the more advanced to redouble their exertions, and possibly sting into vitality the

dormant energies of some who have slept far into the day, and arouse them from the night-mare slumber of inaction, which, if unbroken, may terminate in their professional asphyxia.

In order to do anything rightly a man clearly must have these three things—(1) a wish to do the thing; (2) a knowledge of how he ought to do it; and (3) a force of will to make him do it. The first requirement—the wish to do the thing—I will call, in reference to you, a love of, or a bias for, or a natural inclination towards the particular calling of a medical man. That predilection for this special profession I assume you possess from your presence here to-day. The second requirement, the knowledge of how you are to attain your object, will be put before you in detail by your various teachers, but I may say it is principally drawn from two great fountains—the dissecting-room and the hospital, between which, if you are wise, you will almost equally divide your time. The third requirement, the force of will to make yourself do your work, is the great difficulty; this comes from within, not from without; there is nothing men differ more in than in the force of will or power of character; it is by the imperial quality of will, moral and mental empire are established; there are weak wills and strong wills; strength of will is far more potential than physical power; the triumph of mind over matter is daily seen. Will is manifested and measured by energy. The powers of the will can be aroused by enthusiasm, fed by encouragement, and directed by the mind towards any object the owner chooses. The will cannot work perseveringly without an object, and the energy resulting from the action of the will must and ought to be fed in its early efforts with assistance and encouragement, or it is in danger of withering from want of support. It has always seemed to me that what was most required in the education of medical students was a means of setting their wills in action, and a timely encouragement of the incipient efforts which result from even the slightest commotion in the mighty engine which exists in each of you. Once the will has been aroused by desire of any object, and the means of attaining that object have been made clear, the machinery of your progress becomes self-acting, and self-education commences; no doubt careful direction of your studies by experienced persons is necessary, particularly when novel lines of research are opened up, but once a student has got a fixed object before him, and made up his mind to work for that object, he has got hold of one of the most potent secrets of success, and it depends upon himself how far he will turn it to his advantage.

Of the many men who every year take up the study of the medical profession, do many come from any natural tendency to be physicians or surgeons? A few, indeed, may be endowed with some congenital aptitude for it, or may have imbibed some taste for it from the domestic influences of medical society; but many more propose to adopt it as a

means of procuring a livelihood as respectable as any other, or perhaps owing to an unsuitability for the other learned professions, or attracted to it by the prosperous career of some friend or acquaintance whose success they hope to imitate. It is not for me to investigate the reasons which have led any of you to adopt this profession; I only want you at once to ask yourselves have you at present any wish for it. Those who find they have are fortunate, for they have an object on which to exercise the power of their will, be its power great or small. But there may be some who cannot honestly say they at present feel any special calling for it. They have never given the matter any particular attention, but have cast in their lot with others to take their chance for whatever may turn up. I want to make an object for such, because I do not know how otherwise they can continue, without some aim before them, to labour at what must be to them but tedious and uninteresting drudgery. Most unhappy of all men is the man who has no fixed and definite object in life, who cannot tell what he is going to do, who has got no work cut out for him in this world, and who drifts purposeless along the stream of time, without rudder or compass, till he is beached on some sand-bank—solely useful as a warning to others not to imitate his courses.

Let me try to stir up the minds of any of you who, up to this, have had no interest in this profession, by reminding you that you are about to prepare yourselves for a profession which is fast rising to its just place in the estimation of the public, and which must become ere long an influential power in the State. The interests which will be committed to your care transcend all human valuation; to your protection will be entrusted lives incomparably precious; you will have access to the most secret recesses of private life; you will be the repositories of the most sacred confidences, and know the closely-guarded mysteries of families; you will be made acquainted with the private grief which is debarred the consolation of public condolence, because it dare not be divulged. The greatest problems of existence—birth and death—seen by comparatively few, will be constantly before your eyes; it will be your privilege to scrutinize minutely Nature's greatest masterpiece, unscared by those innate feelings of horror and awe which make others shudder to look upon the body once the soul has fled. The most learned and the most powerful must bow to your opinion, abide by your decision, hang upon your words, implore your assistance; life is dearly loved, and in their extremity men will call upon you, as if you were a god, to save them or theirs—to avert or to delay the critical paroxysm which is about to sever their connexion with this world.

Such are some of the duties and privileges of your profession; they are such as no other profession can lay claim to; they touch the deepest sympathies of human nature; they may not come home to you in their



full force now, but they often will in quiet times, when you turn in your minds the thoughts of what, even as students, you daily see and hear; they will convince you of the dignity of a profession which has full scope for the exercise of every virtue, and of the high destiny a medical man is called to who aspires to be a worthy member of his order.

Let me thus endeavour to create an interest for you, and, while your enthusiasm is warm, let me suggest as an object—"Excellence in your Profession." This object will call all your powers into play; it will stimulate those laudable aspirations after distinction and success which naturally spring from the bosom of every man, if he will not let them be choked by the weeds of idleness, or nipped by the frosty wind of indifference. Those who have no vehement wish at present to throw themselves with spirit into the study of their profession, I want to try and put into a frame of mind which will be susceptible of conviction, if not at this very moment, at least soon, before their feelings become hardened against the influence of the incidents which are so peculiarly striking to a beginner, if he be only alive to their importance. I would have you feed your newly-generated interest with very stimulating food, by keeping always before you a high and worthy object, such as "Excellence in your Profession." If you can but overcome your initial inertia, this object will put you in possession of a motive force to keep you in constant action upon the right track. I have specially selected even the words of this motive, Excellence in your Profession, which is to be your amulet and talisman; it is an object both honourable and remunerative, within the capacity of all who think it worth striving for; it is an object real, tangible, and substantial. I have not named it Success, because it includes success, and is greater than success, and because success has too much of a commercial smack and of a pecuniary significance wrongly lingering about it, to justify me in putting it before the students of a profession whose generosity is romantic. This profession is not a mercantile one; you do not enter it to amass fortunes, but to do good according to your ability. Fortune may come, and fortune does come to many; but to few, indeed, unless through their efforts at Excellence. You may not secure more of this world's goods than will suffice to maintain a comfortable and respectable position in society, but you can obtain, every one of you, rewards whose value is inestimable by monetary standards, in the satisfaction of doing good. I do not think that any one of you who will ever feel that he has been the means of saving a helpless family from early orphanage would, if he has the spirit of a man, refuse to admit that there is a joy of the heart under such circumstances superior to any that could be otherwise obtained.

I would not have you believe that this object and aim which I put before you as the best I know of—Excellence in your Profession—is in

any way a delusive one. There are cold, hard sceptics who will pretend to point out examples to the contrary, men of ability who seem to linger long in the obscure shade of neglect, but I have never heard that any one who practised this doctrine preached against it, and the opinion of any others on such a subject I do not value. The men they point to as examples will come to the front, as sure as the sun will rise, if their life and health are spared, if they have but patience to endure to the end, and if they do not themselves betray their own interests. The growth of the larch tree and of the oak are very different in rapidity, but the one endures a thousand years after the other has long decayed; so all real progress is slow and laborious, all goodness and greatness takes long to ripen, and is slow to be recognized, but its durability is in due proportion to its tedious maturity. Your excellence, even in its beginnings, will be admitted as soon as it is fairly deserved. You will have to make up your minds for many a rebuff; you will have to jostle against many a strong cold shoulder, to fight your way against Olympian competitors, to wrestle like gladiators against your difficulties; but you can by perseverance do what others have done before you, and are doing now—you can make your excellence so apparent that even those who hate you cannot be false enough to deny it. I am at no loss to think what will become of you all; you need not fear that there is not room enough in the profession for you all to distinguish yourselves, or be deterred by the number and ability of fellow-labourers. The whole world is before you; there is no monopoly of merit; there is free-trade in the market of ability. Every branch of the great tree of medical knowledge is hung with different rewards, objects to different climbers. I do not know that any one ever has had the presumption—and certainly in the future none ever will—to assert that he can lay claim to have eaten of all the fruit of this ever-expanding tree, and left none to satisfy the demands of others. Hopeless, indeed, would be the insane attempt. He could not do it, even if, possessed of all the wisdom of Minerva, he were to combine the craft of Dolomedes with the physical strength of the hundred-handed Briareus, and were to live to the age of Nestor, the attempt would end in folly. There is opportunity and scope for every one of you to aim at and to arrive at Excellence in some department of his Profession.

And let none of you, lamenting that he has not conspicuous talents, or that his preliminary education has not been carried to the length it has in others, think that he cannot start on equal terms with others, that he is weighted in the race, and sit with folded hands in a state of irresolute apathy; let him remember that it is a truth which can neither be questioned or denied, that it is zeal, not ability, that works wonders; that it is slackness of heart, not weakness of head, that keeps men back. If I could but awaken in such a man a real interest in his work, and get him

to bind on his heel the golden spur of ambition, and persevere with dogged industry in spite of temporary disappointment, I would have no fear of his failure in the attainment of Excellence in his Profession. Do not be afraid of not being a "genius" in the ordinary use of the term. Real genius is "the transcendent capacity for taking trouble." You can work your way upwards into the aristocracy of genius by painstakingness; do not fear competition with one who claims the patent of intellectual nobility by right of birth, and would oppose the entry into that exclusive rank of humble and industrious labour. The effort to maintain a false opinion of genius has led to such a prostitution of the term, that it has become a satirical cognomen for an idler. The term genius having taken lodging in "certain heads that were to let unfurnished," has occasioned a hollow echo, as of laughter, from the empty apartments, and brought the term into disrepute. What kind are the men whom you yourselves would call geniuses? Are they the men who have a transcendent capacity for taking trouble, who overflow with energy, the sparks from whose clear steel minds set fire to your thoughts? They are not. Are they not rather individuals of fitful effort, who can do all things by turns and nothing long, who are always letting down empty buckets into empty wells, and frittering away their time in trying to draw them up again—individuals who, living in a constant endeavour to deny the palpable fact that they are over-estimated, are usually irritably vain, and who, on the rare occasions on which they are seized with a fit of industry, develop a marked tendency to investigate the structure and functions of—mares' nests? I am not so foolish as to undervalue power and versatility of brains; but I will back work against the medley of smartness and ability which passes by the name of genius. Do not be afraid of geniuses; do not be deterred by competition.

Try from the first for a wish to do your work well, to get interested in your various studies. I have endeavoured to indicate some of the inducements for you to do so. Cultivate enthusiasm, which is the appetite of work, and aim at Excellence in your Profession. Excellence of a most valuable and lasting kind is within the grasp even of students, and your student-life is a rehearsal of your after-life. Repudiating, as I do, the mere commercial estimate of success, I encourage you to believe that success is not some infinitely distant goal, to be reached by few, with failing powers, near the end of life. Do not accept the satirical definition that has been given of it, that it is a crust to be obtained when you have no longer teeth to chew it. The way to begin to acquire excellence and success as a student is by resolving that everything you have to do, be it great or be it little, you will do it as well as you can. Conquer that dislike to difficulties that almost every one feels when undertaking new and troublesome tasks; sweeten the bitter drudgery of anatomy with the thought that it is absolutely and indispensably necessary for you to master

its details if you intend to aim at Excellence. Soon you will find how strangely easy difficult things are. Whether you like anatomy, or whether you like it not, the only question should be, is it well to make it up? Work into your hearts the truth, that if a thing is right and good to do, its being difficult, or irksome, or disagreeable, is no reason whatever for not doing it, and in self-mastery on this one point you will have obtained the key to all other victories—you have turned the flank of all the forces that can be ranged against your progress.

Let me endeavour to point and shape the application of this idea, that success, of a most material kind, is within the reach of every student, even though I run the risk of exciting a smile by the simplicity of my illustrations. Let a first year's man, commencing this session to learn his osteology, determine, before Christmas, to make himself thoroughly acquainted with the sphenoid bone, and so to get in the wedge which will split asunder his first difficulties. When he has mastered the history and geography of that celebrated bone, he will have obtained a success in his way which, small as it may be, some have never shared; he will feel his success, and know it, and be proud of it, and be to some an object of wonder if not of envy; and, flushed with conquest, he will proceed to master the base of the skull. It is not that there is any intrinsic value in a special familiarity with the sphenoid bone, and some may advise him to spend his time, in preference, on some other part of the skeleton, but it is perhaps the first fortress which he will meet in his way, and he is wiser to take it by assault than to leave it uncaptured in his rear, a perpetual source of trouble, sure to perplex him at all events at his examinations; it is the patience, the pains, the repetition of effort its mastery has required, which will give him the superiority over one who will otherwise postpone or avoid altogether the exercise of each of those valuable qualities.

Let a more advanced man assail the difficulties of the internal maxillary artery, Meckel's ganglion, and the organs of special sense, resolving not to desist from self-dissection of them till by dogged perseverance he has made them out for himself; and, when he has succeeded, he will enjoy advantages derived from the care, neatness, accuracy, and painstakingness required to accomplish the tasks, not possessed by those who have obtained their knowledge of the same parts by easier methods. He will have a success secured by his own exertion, a type of future conquests; the prizes of his class he will then contend for, and at his hospital he will aim at success, carrying out there also the principles of attacking the difficulties in his way, and doing whatever he gets to do as well as he can. He will aim at success in drawing a tooth, in bandaging a leg, in dressing a cut head, and the first time that, after many attempts, he passes a catheter, or makes a neat cast, or a correct diagnosis, he will have a success as valuable to him in the feelings of satisfaction and confidence

conferred, and probably felt much more acutely than many he will enjoy in after-life. His proved Excellence as a student, proved by his notorious proficiency in these minor matters, will procure for him positions of trust and responsibility; as resident pupil or clinical clerk he can widen the basis of his operations, come in close contact with those who can be of use to him, and finally he will enter upon the practice of his profession with a good name, which really is more difficult to lose than it is to gain. Thus your whole student-life may be a career of small successes, each of them an increment of power, successes over your individual difficulties assailed one by one, and carried by concentration of your force on each as it occurs, which simply means by doing whatever you have to do with all your might. It is by acting on this principle that you will break the bundle of sticks one by one which, if collected together, you could make no impression on. There is no other quicker or easier way to obtain eminence in your profession; the good opinion even of your fellow-students—much less the confidence of your brethren and of the public—is not a thing to be taken by storm, by a sudden rush on the part of some bold adventurer, even though clad in triple brass. None suddenly jump to any permanent success; such acrobatic attempts are perilous even for the most skilful mountebanks, and usually end in disastrous failures. It is a slander upon the name to call notoriety success. Notoriety is but the Dead Sea fruit of shallow and artificial pretension. The mature and full blown success which the world falls down and worships is no fortuitous result of happy combinations of circumstances, of lucky shuffling of the cards, but the ripe product of cultivated industry; and the little primary successes attainable by students are like the unnamed and unnoticed rills and streamlets which, by increase in size and number, at length constitute a resistless torrent. Do not believe in chance, or trust in luck. Listen to the words of Sir D. Corrigan, addressing, this year, the students of St. Mary's Hospital Medical School, in London,\*—words which, as a fellow-student with you, I lay to my own heart with hope and comfort—words which will justly weigh with you, in comparison with mine, as a talent of gold against a shekel of silver:—“Look around you abroad on the men that, in this great city (London), have risen to eminence in our profession, and who have continued to command the confidence of the public, and you will not find among them one who has not laid the foundation of his success in his own early and continued labour; and this explains what we so often see, that many of the men who have attained the highest positions and greatest wealth are men who had in early life neither connexion, nor party, nor sect, nor wealth, nor influence to aid them on their way.” Gentlemen, they had the principles which are submitted to you to-day for your acceptance or

\* *Lancet*, July 2nd, 1873.

your refusal, as you please; they had an interest in their work, and diligence and enthusiasm, a combination which almost forces success on men; they acquired the habit of self-mastery, whence comes that moral regularity without which the golden image will have feet of clay; they acquired the power of self-reliance which, while it in nowise despises, in nowise leans upon the support of others; they had patience to bide their time, they had a worthy object in view, they aimed at Excellence in their Profession in the right way, and they obtained it.

In addressing you to-day, I have proposed for your imitation the example of a man starting in the study of this profession with a wish to succeed, a knowledge of how to succeed, and a will to make himself succeed—these attributes comprise the essentials of what may properly be called a first-rate man. In trying to picture what a first-rate man can, and does, and ought to do, I have set up, it is true, a very lofty standard, but I would be offering an insult to this School if I adopted any baser model for their imitation. You have such men in abundance among you, for energy and diligence find a congenial home here in this hive of industry. While you may observe the absence in his qualifications of especial talents or powerful friends, you may notice his possession of a wish and will. These two things, a wish and a will, are confounded by many, but they are different and not synonymous. The wish is but a motive to the will; the wish, at its best, is weak compared with the terrific power of the will, when strong, for good or evil. The wish may be in many of you now—it is an emotion of the mind, a kind of feeling stirred by various stimuli; but the wish is weak if only a wish. The will, if it be in you, is a much sterner source of power; deep, silent, lasting, a will will sustain the bodily frame even against hunger, thirst, fatigue, pain, sleep. Indomitable Will sees nothing but its object, strides towards it over all obstacles, and, not unfrequently, too powerful for its corporeal investment, has fretted its frail casket into an early grave. This possession of an unconquerable will is the secret of the untiring industry, unrelaxing perseverance, and almost sleepless activity of one who passes by the simple but noble name of a working man. You wonder at it, you cannot understand how he seems to care for nothing that others care for, and to revel in labours that others shun; you tremble at the temerity with which he seems to tempt the destruction of his very life; but the secret of the enigma is this, that he is the possessor of a will, and has bent it in an aim at Excellence in his Profession. Whether you feel it or not, each of you has a will, dormant though it may be—happy would I feel if I could exorcise it into action. Your wish alone I am not satisfied with, it is but the ghostly shadow of a will. There is nothing makes such a difference between one man and another as the possession of an acting, living will. How are you to get it into action? By getting an interest in your work which will lead to your performance of every duty with all

your heart; then you can direct the spontaneous energy or surplus activity of the system which is attendant on health, nourishment, and youth, upon the execution of your studies; the inherent active force, which in so many has no purpose at first but to expend itself, can be directed into fertile channels. But, having evoked this magic power, be careful that, by early guidance and strict direction, you get the whip-hand of it and be its master, before it grow too headstrong to submit to your dictation.

In every great school like this there are many forms and shapes of mental power and mental energy, and I do not want to direct my words alone to the intellectual giants among you. There are others who on this opening day are to be cheered and encouraged to get in motion on the road to success, even though they do not aspire to travel to fortune with the speed of express trains. There are among you many honest and earnest workers, whose powers and achievements may not be such as to place them in the ranks of those who will exert a marked influence on their generation; but they, too, have their meed of honourable reward, for every form of sterling work has its own absolute and independent value. Supremacy in medicine is of many sorts and degrees; and as there are masterpieces of art in silver and in bronze as well as in gold, so are there excellent men in every walk of medical life who enjoy many of the rewards, with few of the sacrifices, of those who struggle for the foremost places. It is the greatest of all mistakes to do nothing because we think we can only do a little. And there are yet others, students as true and as zealous as any in the pursuit of truth, and as anxious to play well their part in life, but they are over-weighted with cares and anxieties to which more favoured ones are strangers; they have claims upon their energies and taxes on their time which handicap them heavily. With such are my very warmest sympathies; such I would encourage to fight manfully against the odds even what seems a too unequal contest; they have double work to do, but let them stand up to it like men. It is true and certain that any decent measure of exertion will suffice to pass the examinations with which the portals of the profession are justly guarded; and then, freed from the trammels which now enfeeble them, they will have their success as well as others in saving life, in restoring health, in averting disease, and can enjoy the luxury of doing good to human kind—a luxury which is as sweet to the true heart in the humblest as in the highest walks of a profession dedicated to the service of charity. The humblest or the most junior worker in the profession, if he have at all a heart sympathetic to such feelings, can feel it throb with a great, royal, and magnificent joy, when his unpaid services have been successful in assisting nature to a victory against an assault of death—a joy deeper, fuller, and far more enduring than any which the riches or the honours of the profession could confer.

But, gentlemen, I do not want you to be impractical in this matter-of-

fact age, nor to lead you to think that I would have you work merely for unsubstantial rewards, which, sweet as they may be to the soul, are badly calculated to support the body. Remember, therefore, that you are not in danger of perishing if you adopt the principles I advocate; for merit will be paid according to its worth, and the scale of compensation for a medical man will greatly depend upon himself and the position to which he raises himself by the value of his services; but I have not brought this subject into the foreground because, as I said before, I think a pecuniary motive for industry in our profession is the last which I would be justified in bringing before you, who know as well as I do that the medical profession is one unparalleled for its generosity, and in which monetary considerations are always secondary to the paramount interests of humanity.

So far, gentlemen, we have been looking at but one side of the medical student, and his studies, and their results, and I pray you that the patience with which you have indulged me while we looked at the bright and hopeful and successful side, you will continue to extend to me, while very briefly I consider the result of the negation of the principles of industry, enthusiasm, and aiming at excellence. I may have appeared to some of you to have come forward here to-day in the character of a popularity-hunter, to have loaded my tongue too thickly with the coarse brown sugar of flattery, and to be promising success to all, both right and left; and if so, I must now proceed to remove that false impression as quickly and as kindly as possible, and to counteract it with a little of the lemon of impartial criticism. The inquiry cannot be avoided, why is it that more do not succeed in a visible and substantial way; why is not the harvest richer when it comes to be gathered in? The crop of would-be workers is thinned by many inevitable causes; health fails some—sometimes from wilful neglect of that invaluable blessing; at other times, physical unsuitability for the really severe toil of the profession, though not apparent at first, becomes, after some time, too obvious to admit of over-severe exertion. With others the energy evoked on occasions like the present is but the flare-up of lighted straw, and is cold and dead before it has accomplished anything. Others are led astray from the rough fields of arduous work to flutter over the flower-beds of easier and more congenial pursuits, in a vain search for roses without thorns. Others, disheartened by want of encouragement, or downcast by failure, forgetting that the darkest hour of night precedes the dawn of day, give up prematurely. Some lag by the way-side, trusting to make up for lost time in a by-and-by which never comes, and others fall headlong into the bottomless pit of habitual idleness. Hence it comes to pass that the race is thinned, and that of all who start some drop out at the first round, some at the second or the third, and finally but few may reach the goal. For almost all these causes of failure,



apologies may be made and remedies employed, but for the blighting mildew of wilful idleness. I know, as every one does, that this School is celebrated far and wide for the industry of its students, and that is the very reason why you should wish to see it purged of even a single idler. Against all classes of idlers—the silly, the systematic, and the scientific idler—I fearlessly, from the outset, proclaim the most uncompromising hostility, and invite all true students to join me in the crusade. For real idlers I have no sheet lightning of polished and playful sarcasm, but red forked darts of terribly earnest reprobation. The almost inevitable result of want of interest, inattention, and indifference to progress is idleness and folly, and it cannot well be otherwise, seeing the peculiar and multitudinous nature of the professional studies required. While I would foster with the most genial encouragement all ardent efforts at progress in your young and fresh hearts now open to impression, and long to stamp on the waxen tablets of your minds, now soft, the monogram of work, I have for idlers of the constitutional and confirmed class a scourge of scorpions with which I would drive them from even the approaches to a profession which has no place for any but working men, which will ever be ashamed to own them, and which they can never celebrate but with disgrace. It is they who have made a by-word of the name of medical students, and brought into disrepute a class of men more brave, more generous, more tender, more true to all the truest instincts of human nature, than are to be found among the students of any other profession. For, thanks to idlers, and to them alone, the name of medical students has been traduced with systematic exaggeration by those who never knew the sentiments of the real representative men of the class. Would those who have dipped their pens in caustic to write the biographies of medical students, would they give up their natural rest or recreation to sit all night by the bed of an hospital patient, to secure the success of an operation, or soothe the delirium of fever; or, steeped in self-forgetfulness of danger, would they volunteer to carry in their arms, with the gentlest care, the cholera, or typhus, or small-pox patient, or stand for hours daily in the very focus of a pestilence, undismayed by the sight of their comrades falling fast around them? The heroism of medical students is superb; it has borne the crucial test of martyrdom, even without the support of public applause; for publicity of their brave and unremunerated deeds is a thought which never crosses their minds. It is the foolish freaks of a few idlers, disclaimed by the majority, which have smirched our fair escutcheon, and given our enemies cause to blaspheme a name which is the embodiment of valour and disinterested virtue. Hence it is (if for no other of a thousand reasons) my indignation burns against those who grow up with no better destiny than to become the noxious weeds which disgrace our profession.

Idleness may be said to be a moral syphilis, a swinish malady; if unchecked it runs its definite courses and stages. A student may, in his first year, contract the contagious vice, too often from an unfortunate connexion with tainted companions, exhibiting it by an utter indifference and disrespectful want of application; in his next year, if unreclaimed, he will develop the disease in secondary symptoms of a more varied kind; in the following year, a tertiary idler, still more obnoxious phenomena of the complaint, appear; and, at last, a chronic and incurable, he may manage, indeed, to creep into the profession, possessed of the sad wisdom folly leaves behind, but he is an unwholesome and a dangerous member of a profession ashamed to own him. The chains of remorse, forged link by link with his own hands, clank about his neck, ringing for ever the knell of his hopes of success.

If any of you have been so unfortunate as to have been entangled in the snares of idleness, now is the time to disengage yourselves. One of the best objects of these set addresses at stated critical and impressive periods I have always held to be the administration of a strong, fresh stimulus to working men, and of a powerful antidote to those who have been poisoned by apathy. The beginning of a session may be the turning-point for many who have hitherto done little that will ever be of any use to them.

An opportunity of repentance is now afforded to all who desire it. I, as well as each of my distinguished colleagues, will welcome with open arms any who will turn to work, even at the last moment. A rope is now thrown out to any of you who may be about to sink—perhaps for the third time—in the seething flood of his own follies. If there be one such among you, catch it, and hold it, and be brought to land, and saved from suicide. You may think that nobody takes an interest in you, or wants to teach you—that nobody understands your difficulties, and will take you by the shoulders and make you learn. Make but one final effort to improve your time; the rainbow of hope still shines on for you, even to the eleventh hour, and you will find that there are hearts which will look kindly on you, when many seem so hard and indifferent to you, and their help will be precious to you beyond price in a world which you may at present consider to be inhospitable and cruel, and in which every one's face seems to be set dead against you.

Gentlemen, in the announcement of this address it was stated that the lecture would be "introductory to the several courses," and yet I have alluded to none of the special subjects here taught you. I have preferred to bring before your minds some great and eternal principles which, ranking far above all technical knowledge, can shape and mould your lives to usefulness and celebrity. But that you may have a clear view of my opinions as to the essential nature of your *actual* daily study, I would say that certainly in these days you should almost equally divide

your time between the study of the living in hospitals, and the study of the dead in the dissecting-rooms. Your lectures and your reading, and your private instruction, may be supplementary, explanatory, and suggestive, but the business of your life is with the body itself, and that body, alive or dead, should be an object of your personal attention every day. The exertions which I trust you will all make to apply the great principles I have urged on you, will lead you to be punctual, regular, and attentive to all your duties, but above all to those of the hospital and the dissecting-room.

In conclusion, I have only to say that whether or not I have at all succeeded in conveying to you the sentiments of my mind, my desire has been to impress on you the necessity of work—early, systematic, and painstaking work, and the necessity of a motive, without which you cannot have enthusiasm, the appetite of work. I have suggested as a worthy motive, “Excellence in your Profession.” I have tried to encourage all, no matter what their present probabilities of success, to aim at Excellence in their Profession, because I believe that all of you can reap some fair reward or other well worthy of your exertions. I would encourage those who have already lost some time, to loose no more; those who are beginning their studies now, to aim at successes from the very first; those who want even this day to do something right, let them do their next task in a better way than they ever did anything before—that is, as well as they can. If there *are* secrets of success you have them now, but they are not secrets—they are thought to be so, because they are not used by many; they are difficult to carry out at first, because you must master self to practise them, and that *is* difficult, too difficult for some—they want the will. The real inmost secret lies in the will; *that* I cannot give you. If I have in any degree stirred your will, foster its first motions, nurse them, feed them; the will is the essential source of all the secrets of success.

For your patient endurance and kind attention, gentlemen, I thank you, and beg to assure you all that the warmest sympathies of my colleagues and of myself are with each of you in your labours, and that you have our best wishes for your ultimate and complete success.

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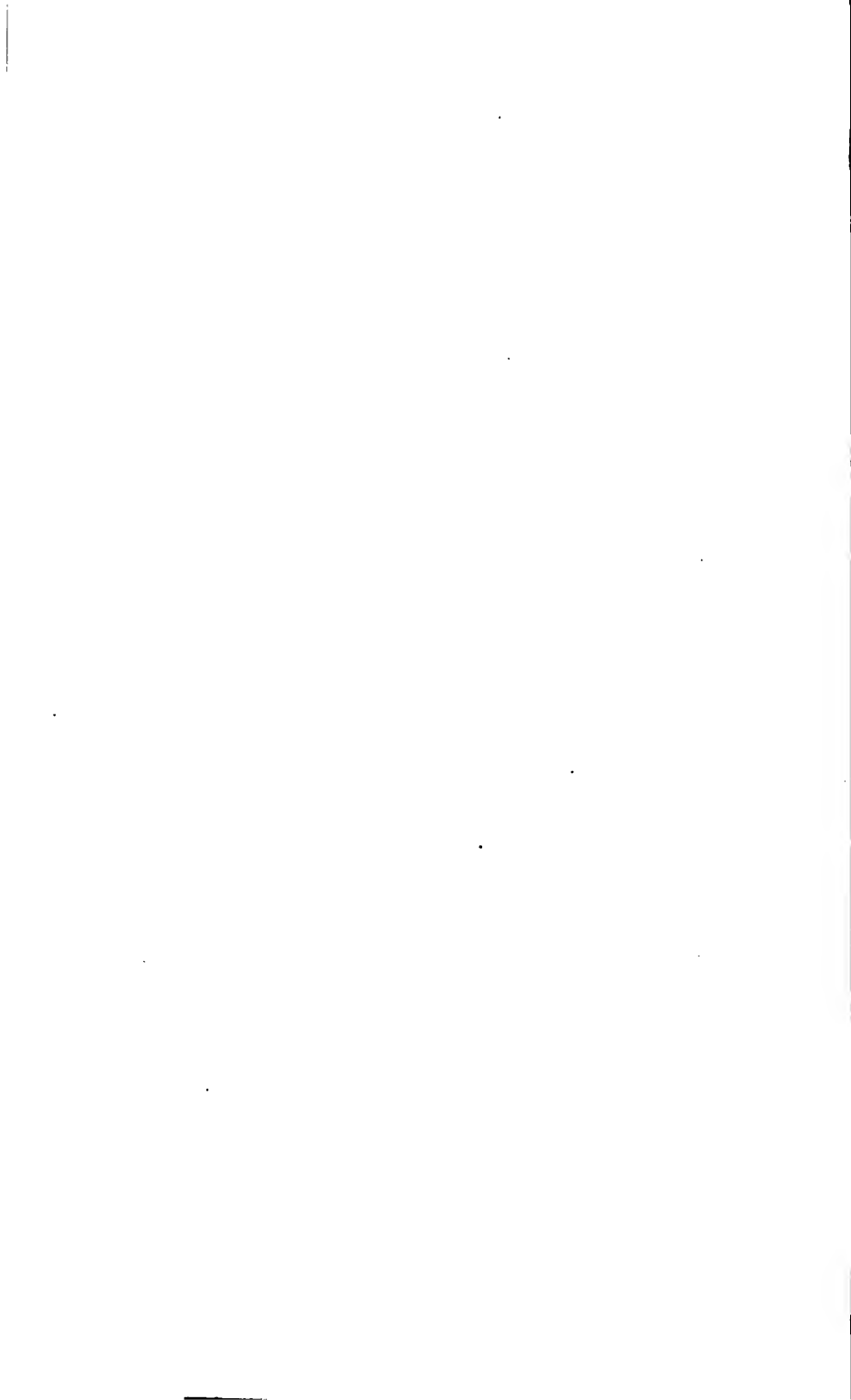
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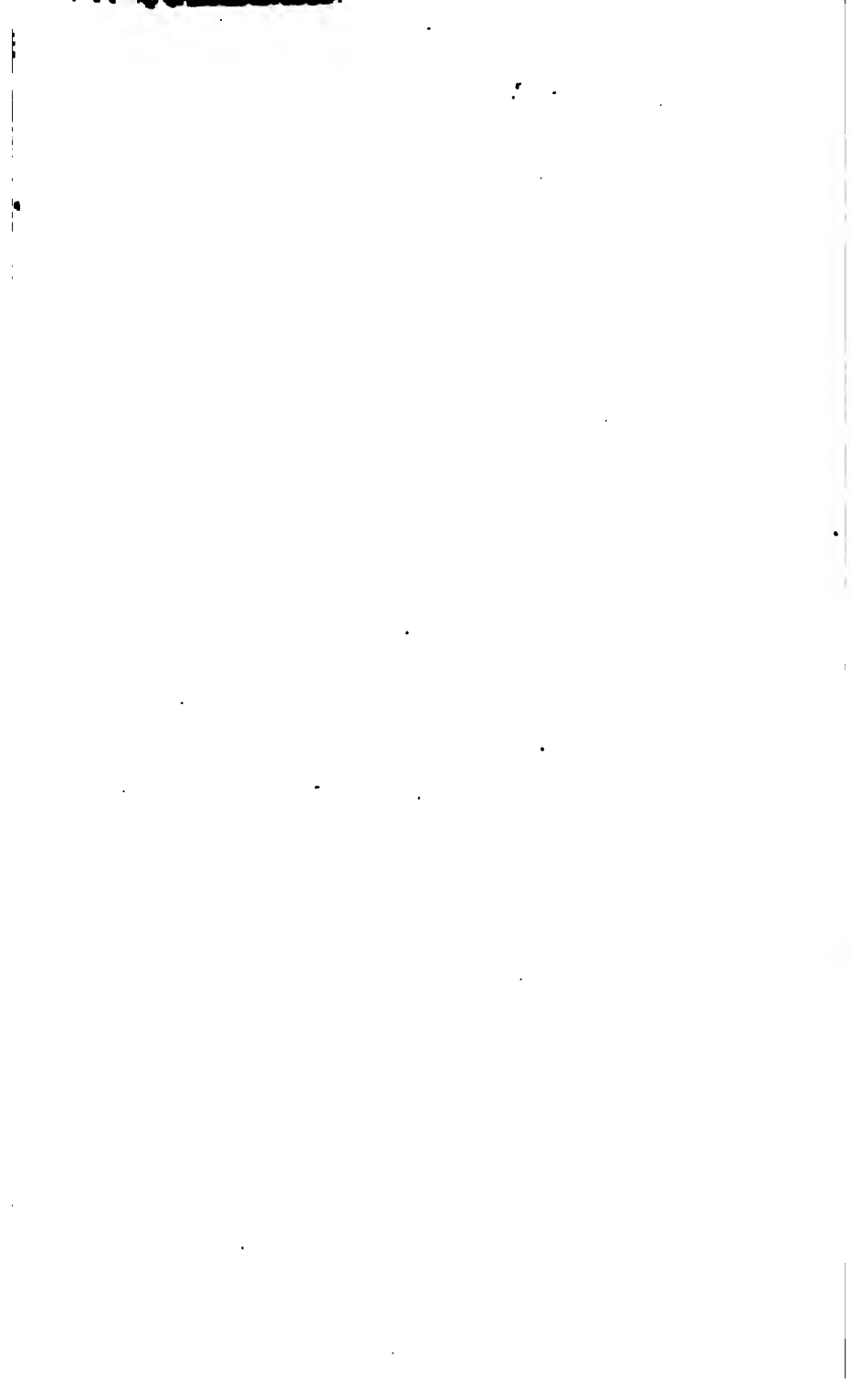
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